THEORETICAL STUDY OF STRUCTURAL RESPONSE TO NEAR-FIELD AND FAR-FIELD SONIC BOOMS

FINAL REPORT

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By John H. Wiggins, Jr.
and Bruce Kennedy

Contract No. AF 49 (638)-1777
October, 1966

Prepared for
National Sonic Boom Evaluation Office
Department of the Air Force
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DATACRAFT, INC.
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FOREWORD

This study has been conducted under project-task number 7908 for the Air Force Office of Scientific Research, Colonel Charles R. Foster AFRST-SB monitoring. The study was conducted between 1 July 1966 and 30 September 1966 and the final report submitted on October 12, 1966.

The authors expressly want to thank Mr. H. W. Carlson of NASA Langley Research Center for the waveforms and advice supplied in support of the study.

Publication of this report does not constitute Air Force approval of the report's findings or conclusions. It is published only for the exchange and stimulation of ideas.

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ABSTRACT

This study investigates the difference between near-field and far-field sonic boom intensities. To do so, it defines a new intensity standard, effective static load which depends on load waveform as well as magnitude. Many sonic boom loading waveforms are computed for 19 structural elements of various types produced by two SST designs as well as F-104, B-58 and XB-70 aircraft. It is concluded that near-field booms are less intense than far-field booms, the magnitude of the difference depending on the character of the waveform. The more the waveform is distorted from a symetrical far-field (N-wave) wave shape, the lower the near-field intensity. It is recommended that further theoretical study be made in order to quantify results and isolate the influence of specific parameters on boom intensity.

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Symbol	Definition
A	Area of exposed element
B	Base dimension of building
C_a	Speed of sound at aircraft altitude
C_o	Speed of sound at building
DAF	Ratio of P_{eff}/P_{max}
H	Height of structure
K	Constant
L	Length of building
M	Mach number
P_F	Maximum free-field pressure at height of element
PLOAD	Point of loading from base of structure
P_{eff}	Effective static load
P_{max}	Maximum dynamic load acting on element
p(t)	Variation of pressure with time
R	Distance between airplane and observer
R_s	Reflectivity coefficient for structural element
S	Shortest distance between PLOAD and a free surface
t	General time
t_a	Delay time for backwave cleanup
t_b	Delay time for wave to travel from front to back of structure
t_g	Ground reflection delay time
t_s	Bleedoff time for reflected wave
W	Weighting Function
X	Response of a single-degree-of-freedom system
α	Roof angle
β	Damping factor
Δp	Free-field overpressure at ground level
Δp_o	Free-field overpressure in the free air
Δp_i	Free-field overpressure within a building
Δp_g	Free-field overpressure reflected from the ground
ϕ	Arbitrary function
σ	Standard deviation
τ	Duration of free-field source boom wave
W	Forcing frequency or
W_o	Intersection of Fourier envelopes of free-field boom waves
Wn	Natural circular frequency of a structural element

I SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

A. Summary:

The supersonic transports of the future will be so big that the sonic boom produced during the acceleration phase of their flight will have a near-field character. Boom waves in the near-field differ from those in the far-field (N-wave) in that they possess secondary shocks and have greater positive than negative impulse. With the advent of a more refined theory to predict the waveform and magnitude in the near as well as the far-field, the question is asked about their combined effect on structural intensity. Investigators have recorded the behavior of structures to far-field and near-field boom waves from small aircraft, but no clear-cut analysis of effects has been made. Further, no intensity studies have been made for the predicted SST boom waves. This study attempts to answer some questions about the effect of boom waveform intensity. It is theoretical in nature and is intended to supplement and complement near and far-field boom data gathered and analyzed during the Edwards Experiment being conducted by the U.S.A.F. Specifically, the study compares the intensities of near-field and far-field booms from various SST configurations predicted from the more exact (near-field) theory and the less exact (far-field) theories.

The definition of intensity is also modified and refined from the current measure of peak overpressure to a new measure, the effective static load produced by a boom on the element in question. To compute the new intensity, however, loading waveforms must be derived. This study computes these based on available theory and empirical results from blasting research and empirical results from sonic boom experiments. It then applies the net loads to 19 structural elements of various kinds. Known perturbations of the free-field waveforms are also introduced into the computer programs prior to loading waveform fabrication to simulate nature as closely as possible. Finally, near-field intensities, as newly defined, are compared with far-field intensities.

B. Conclusions:

The following conclusions are based on theoretical results and are subject to the limitations of the theory discussed in the text.

1. Near-field intensities in general are lower than far-field intensities. They are lower than those predicted by the peak overpressure criterion. Several factors combine to produce the differences:

   a. near-field, free-field overpressures are lower than those predicted by the far-field theory,

   b. the near-field loading waves have lower maximum loads than the far-field waves, and

   c. the dynamic amplification factors are slightly lower.

   In general, the larger the variation in waveform appearance between near-and far-field theory, the lower the near-field intensity.

2. No significant differences of coefficient of variation between near- and far-field intensities are noted.

3. The coefficient of variation of intensity is lower than that for maximum free-field overpressure.

4. Racking intensities decrease slightly with increasing size and speed of airplane.

5. Plate intensities increase slightly with increasing size and speed of airplane.

C. Recommendations:

1. The wave fabrication technique described herein has definite limitations and should be refined by further empirical studies of data combines with element model building theories.

2. More elements should be theoretically tested and the results categorized with building size, element height, etc.

3. Weighting factors for the various structural element categories should be derived which describe a cross section of the characteristics of buildings throughout the country. Using these, a general intensity scale can be computed from theory.

4. More analyses of the data in Appendix B can be conducted. For example, height of glass above the ground

affects intensity to some degree. This has not yet been thoroughly studied.

5. Further analysis of loading and response plots, examples of which are shown in Appendix A, are necessary to expose the influence of parameters in governing intensity.

II INTRODUCTION

A. General:

As the various concepts for a supersonic transport design and flight profile become finalized, and with the advent of new theories for predicting the free-field sonic boom character, it becomes apparent that a more satisfactory means for judging sonic boom intensity must be developed. As used herein, "intensity" pertains to the effect of boom on structural response. Of particular interest is the comparison of intensity under near-field and far-field sonic boom waveform conditions.

Until recently, it was commonly thought that the SST boom would be of the far-field, symetric N-wave variety. It is not. The acceleration portion of the flight profile will produce pronounced near-field boom waves and, indeed, in cruise, the waveform will be an unsymetric N-wave with the positive impulse being greater than the negative. Is there a difference in predicted boom intensity as there is in predicted boom signature? The study attempts to answer this question.

B. Prediction of the Free-Field Boom and Boom Intensity:

Theories for predicting the free-field boom waveform have been refined over the years. To a first approximation, the boom strength might be predicted simply from knowledge of the shock energy generated by an aircraft and the geometric divergence ($1/R$ or $1/R^{\frac{1}{2}}$, where R is the distance from airplane to observer). In this case, only an estimate of the peak overpressure and no knowledge of the waveform is obtained. To a second approximation, the free-field waveform and peak overpressure is predicted by the far-field theory (1)*. In this case, the waveform takes the shape of the letter N. In field observations (2, 3) and in wind tunnel tests (4, 5, 6), it has been observed that when the observer is relatively close to the aircraft, the N approximation is not valid. Rather, a series of spikes distort the N shape. It has also been noted that the peak overpressure in a near-field boom wave is lower than that which would be predicted with the far-field theory (7, 8). Is there a corresponding decrease in intensity?

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*Numbers in parentheses refer to a reference in the bibliography.

The evolution and refinement in predicting the free-field sonic boom wave has outdistanced the theory for predicting intensity with respect to structures. In the case of human beings, perceived noise rating schemes have been developed which convert a measured sound into a subjective response domain (9). For structures, the maximum overpressure criterion is currently used. Recently, the so-called response spectrum or shock spectrum technique has been suggested to replace the overpressure criterion. It is used extensively in earthquake and other instances of forced vibration where feedback from the source to the structural system is low. In the case of active air shock loads, however, this concept is not entirely accurate due to feedback and other effects. A different scheme is needed.

The P(eff) or effective static load criterion is proposed as a second approximation for measuring intensity in structures under active sonic boom loads. This is defined as the equivalent static load applied to a structural system under active shock load. Knowledge of both the load magnitude and character as well as the response of the equivalent element in question is needed to predict intensity thus defined.

C. Objective of Investigation:

This study will compare the structural intensity of theoretically predicted near-field and far-field sonic booms from representative supersonic transports supplied by NASA*. It will use the P(eff) criterion to do so. The SST intensities computed also will be compared with those generated by smaller F-104 (10), B-58 and XB-70 (11) aircraft.

*The waveforms were supplied by Mr. H. W. Carlson of NASA, Langley Research Center.

III THEORETICAL APPROACH

A. Rationale:

The basic approach taken in this study was to fabricate fairly detailed near-field and far-field loading waveforms. Then, using these waveforms, the response of relatively simple models of structural elements was computed. For comparison purposes, however, more than one value of response was computed for each element subjected to each waveform. The free-field conditions were perturbed by known amounts prior to calculating response in order to represent nature as closely as possible. Mean values of response are then compared.

Previous theoretical studies have used either relatively simple far-field, free-field waveforms applied to both simple and fairly detailed models of structural elements (12, 13, 14, 15) or simple far-field, loading waveforms applied to simple models (16). None of the previous studies, however, are able to differentiate between the relative structural response to near-field and far-field waveforms.

The selection of the structural element models was based on a compromise between realism and the true model which is largely unknown. After careful study, it was decided to use a single-degree-of-freedom approximation for all structural elements. While it would have been desirable to use multiple-degree-of-freedom models, the time, cost of solution and unknown degree of resolution did not seem warranted.

The results from a single-degree-of-freedom model is not as bad as it might seem. First, elements with both high and low frequency first modes are considered in the study. Comparison of these cases will indicate any differences between near-field and far-field waveforms with regard to frequency effects. Second, the energy in a given mode is inversely related to the mode number (1, 2, 3, 4) and directly related to energy in the waveform at the appropriate frequency. These effects combine so that most of the energy is confined to a single mode (usually the first mode) of the elements. Cheng (14) has shown that higher modes participate little in complex elements under free-field waveforms.

B. Analysis of the Response of Linear, Time-Invariant Systems

Analysis of the transient response of linear, time-invariant systems can be carried out either in the frequency domain using

the transfer function concept or in the time domain using either the weighting function and the Duhamel integral or by directly integrating the differential equations. Both methods give exact answers but, depending on the form of the input data, one is usually simpler computationally than the other.

The connection between the two is as shown below. Let the response of the system $X(t)$, due to a pressure time history $p(t)$, be given by the expression:

$$X(t) = \int_0^t W(t-\tau)p(\tau)d\tau, \qquad (1)$$

where $W(t-\tau)$ is the weighting function (impulse response) of the system which is described by the differential equation,

$$\ddot{X} + 2\zeta\omega_n \dot{X} + \omega_n^2 X = K\, p(t), \qquad (2)$$

where ω_n is the natural circular frequency of the system and K is a constant. Equation (1) can be expressed in the frequency domain in terms of the transfer function by taking the Fourier transform of both sides. The result is:

$$\begin{aligned} X(j\omega) &= \int_{-\infty}^{\infty} dt\, e^{-j\omega t} X(t), \\ &= \int_{-\infty}^{\infty} dt\, e^{-j\omega t} \int_0^t d\tau W(t-\tau)p(\tau), \\ &= G(j\omega)p(j\omega), \end{aligned} \qquad (3)$$

where ω is the forcing frequency. For the system described by Equation (2) it follows that,

$$W(t-\tau) = \frac{K}{\omega_n\sqrt{1-\zeta^2}}\, e^{-\zeta\omega_n t} \sin\left(\sqrt{1-\zeta^2}\,\omega_n\, t\right) \qquad (4)$$

$$G(j\omega) = \frac{K}{(j\omega)^2 + 2\zeta\omega_n(j\omega) + \omega_n^2}$$

It is clear from Equation (2) that if $p(j\omega)$, which is the spectrum of the pressure wave $p(t)$, is known, then the spectrum of $X(t)$ is simply found by multiplication. However, to find $X(t)$, the inverse transform of $X(j\omega)$ must be calculated using the equation,

$$X(t) = \frac{1}{2\pi} \int_{-\infty}^{\infty} d\omega e^{j\omega t} \underline{X}(j\omega). \qquad (5)$$

Because of the difficulty of this calculation and the calculation of $p(j\omega)$ according to Equation (3), it is usually preferable to use Equation (1) to compute $X(t)$ or to ingegrate Equation (2) directly. The former was done.

Generally speaking, Equation (3) is used only when the system response is easily interpreted in the frequency domain such as is the case in terms of energy considerations. For example, if one wants to find the integral of $X^2(t)$ one has,

$$\int_{-\infty}^{\infty} dt\, X^2(t) = \int_{-\infty}^{\infty} d\omega\, |\underline{X}(j\omega)|^2$$

$$= \int_{-\infty}^{\infty} d\omega\, |G(j\omega)|^2\, |P(j\omega)|^2 \qquad (6)$$

by Parseval's identity. In this case, $|G(j\omega)|^2$ has the interpretation of energy response of the system to inputs at frequency ω. Equation (6) is analogous to the equation used in random vibration work in which $|P(j\omega)|^2$ is replaced by the spectral density of the output. Equation (6) cannot be used to find the peak of $X(t)$ because the phase of $G(j\omega)$ and $P(j\omega)$ has been lost in the process.

C. Choice of Free-Field Perturbations:

Experimental results have shown that the coefficient of variation of peak free-field overpressure is on the order of 40 percent (17). Likewise, the coefficient of variation of the boom wave duration is on the order of 10 percent (17). These known variations are incorporated in the study as perturbations of the free-field waveforms so that mean intensity values under pseudo real conditions can be compared.

Because of linearity of the model used, superposition is used in the computations to account for peak overpressure variations.

If, for example, only the variation in overpressure were used, the variation of peak response would also be 40 percent and comparison of mean values of intensity would be superfluous. But the wave duration is also perturbed by atmospheric heterogeneity. However, variations in wave duration are more difficult to account for simply because the relationship between peak response and wave duration is non linear. After considerable thought, it was apparent that the best approach to take was to compute a number of response values for waves whose durations varied in accordance with a coefficient of variation of 10 percent. Four multiplicative time coefficients, accordingly, modified each waveform: 0.918, 0.972, 1.028 and 1.082.

In addition to variations in peak overpressure and wave duration, it is known that low level turbulence causes "noise" in the signatures of sonic boom waves (18, 19, 20, 21). The noise factor either peaks the shock pulses or rounds them off for the most part. It is clear from physical reasoning that the noise is caused by two effects: dispersion and attenuation (22). Dispersion results from two sources: the varying index of refraction as a function of frequency and turbulence and wind. Absorption of energy during passage through the atmosphere causes attenuation. Further, a multiplicative noise model should be used. Because variations in the random atmospheric characteristics are slow compared with the duration of a typical N-wave, it is expected that successive peaks in a given waveform would exhibit essentially identical noise characteristics (20).

The above discussion leads to one form of a model for waveform variation due to random dispersion,

$$p(x,t) = \int_{-\infty}^{\infty} d\omega P(\omega) e^{j\omega(t-x/W)}, \qquad (7)$$

where W is a function of local temperature which is random in x and t, and $P(\omega)$ is the Fourier transform of $p(x,0)$. A simpler, and perhaps better model for the random effects at some fixed position is,

$$p(t) = \int_{-\infty}^{\infty} d\omega P(\omega) e^{j(\omega t + \theta(\omega))} \qquad (8)$$

where the $\theta(\omega)$ is a random function of ω corresponding to random delays for each frequency. In either case, the multi-

plicative nature of the noise is apparent through the presence of $P(\omega)$.

In using either of the above models, some description of $P(\omega)$ and $\phi(\omega)$ is necessary. It is extremely difficult to realistically model these effects in terms of known characteristics of the atmosphere such as mean temperature profile, low altitude turbulence spectra, etc. Moreover, the cost of a suitable Monte Carlo simulation would have been prohibitive. For these reasons, empirical "noise" perturbations based on past experimental records were used in the fabrication of waveforms. While this is not the most desirable procedure it will certainly indicate the first-order effects of such perturbations.

In a study by NASA, conducted at Oklahoma City, a large number of waveforms were obtained under different weather conditions (10). The investigators labeled the waveforms to be of the P (peaked), NP (normal-peaked), N((normal), NR (normal-rounded), or R (rounded) type in order of degrading "peakiness". When the nu ber of observations made under each category were tabulated for altitudes above 30,000 feet, it was shown that the majority of records were of the normal or NR type.

The average rise time of the NR records was on the order of 10 milliseconds. The noise portion of the study was, therefore, limited to studying two types of equally weighted conditions, those with normal waveforms and those waveforms that had a rise time of 10 milliseconds.

IV FABRICATION OF THE LOADING WAVE

A. General:

There are many variables that modify a free-field wave upon striking a building element. Some of these are:

1. Shape and dimensions of the structure,
2. Position of element within the structure,
3. Mach angle,
4. Reflection coefficient of the structural element loaded,
5. Reflection coefficient of the ground,
6. Transmissibility of the structure in toto,
7. Speed of sound,
8. Manner of load (racking or plate),
9. Leakage of structure, and
10. Angle of attack (head-on, side-on or trailing).

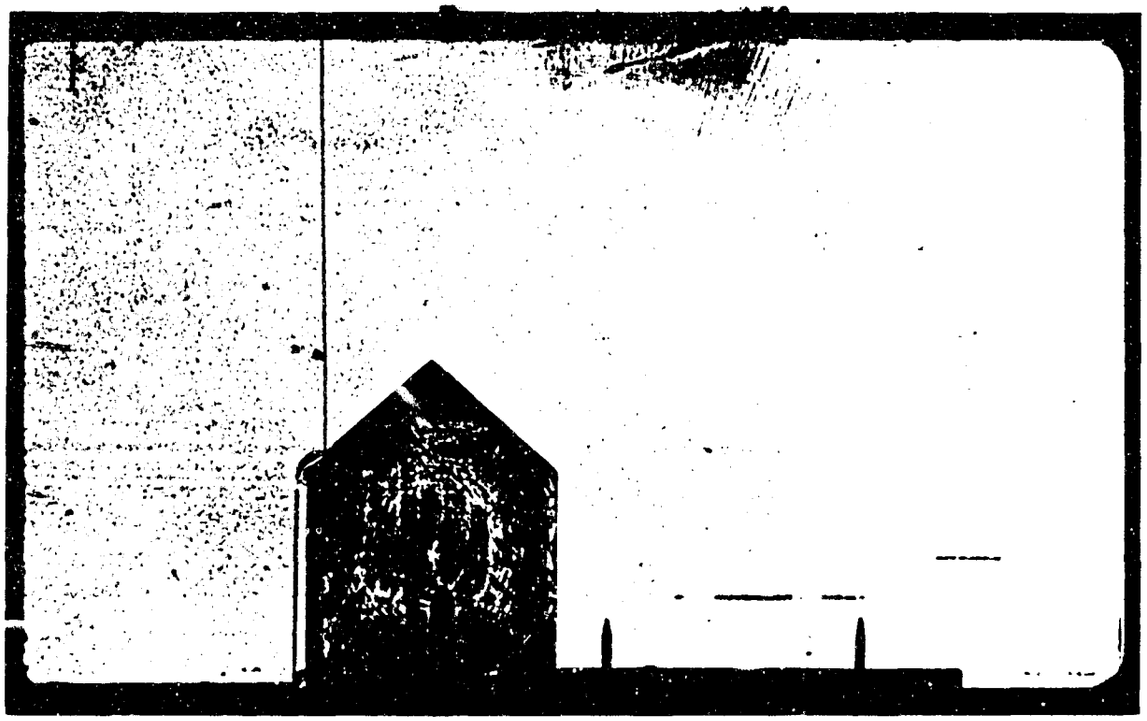
In this study, the critical vector or head-on vector is the only one considered. All of the other variables mentioned above, however, are treated in one form or another.

The technique of fabricating loading waveforms was developed during nuclear weapons effects research (23, 24, 25). Because of the extremely high pressures of interest, however, refinement to the degree necessary for computation of response to sonic boom was never accomplished. Also, research in load fabrication was different in that design rather than analysis of effects was the end product. As a result of this and other factors, parameters 2, 5, 6 and 9 were not treated. Parameter 3 was assumed always to be 90°.

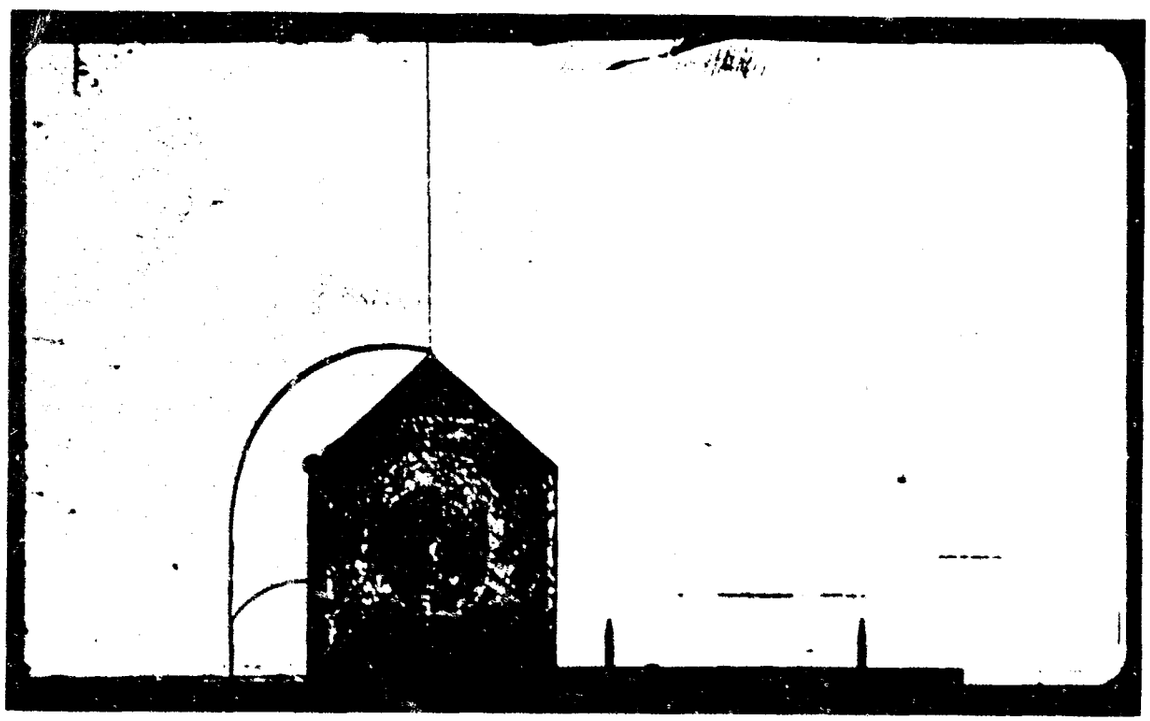
The following discusses the logic, some of which is old and some new, that was used in generating the loading waveforms. Almost all of the manipulations, even the old ones, are based on empirical results from field or shock tube data, not theory per se.

B. The Racking Load:

The racking load distorts a structure in the shear mode. Note in the photographs of a shock wave hitting a simulated structure in a shock tube how a front and a back load will be displaced in time (Fig. 1). Note further the large time necessary for the back load to "clean up".

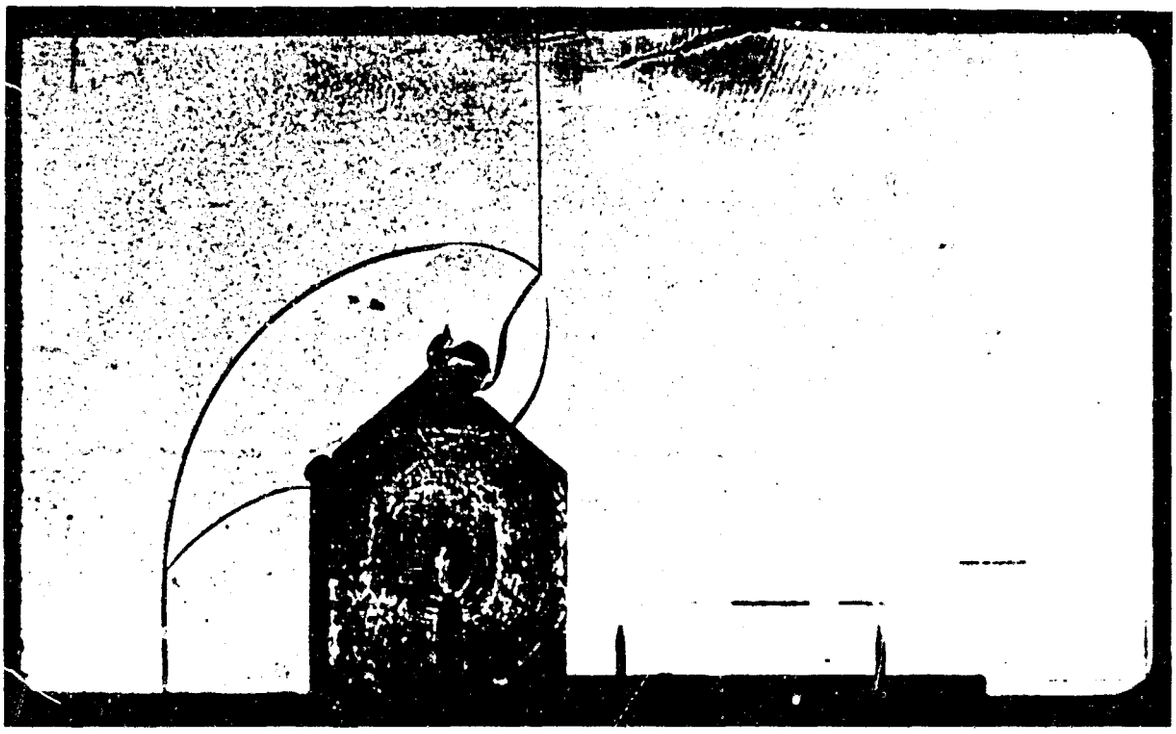


Condition 1

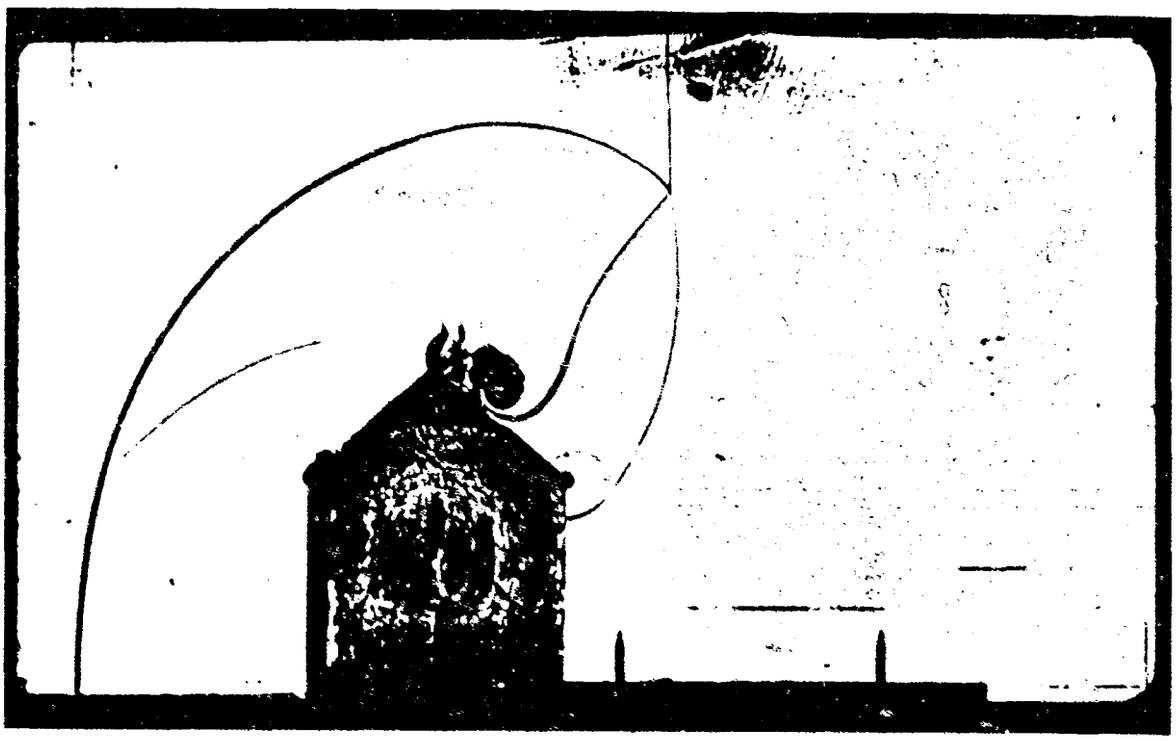


Condition 2

Figure 1a. Shock Tube Schlieren Photographs of a Blast Wave Traveling Over a Simulated Building.

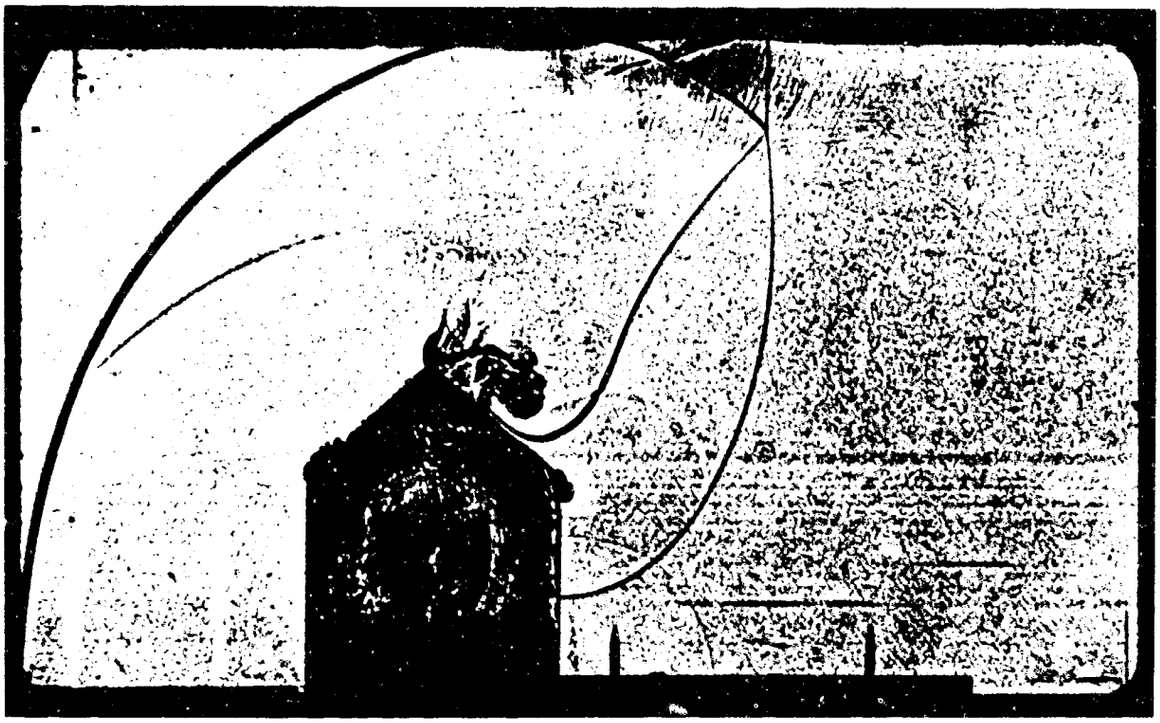


Condition 3

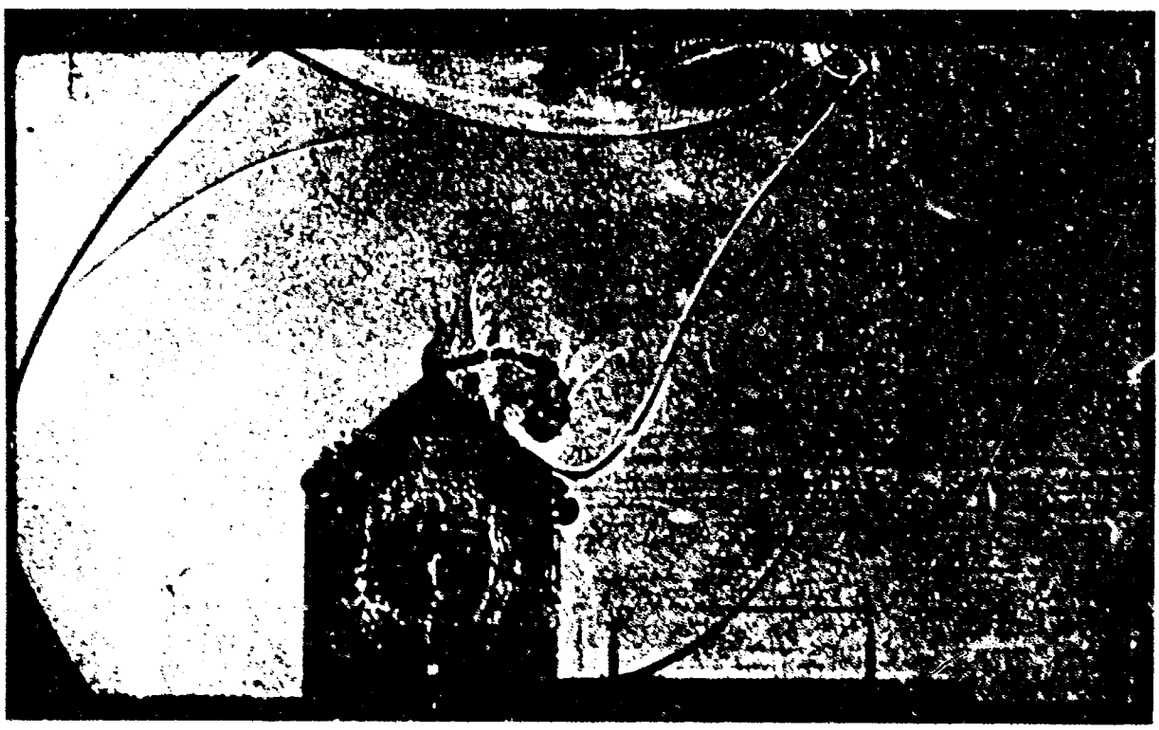


Condition 4

Figure 15. Shock Tube Schlieren Photographs of a Blast Wave Traveling Over a Simulated Building.



Condition 5



Condition 6

Figure 12. Shock Tube Schlieren Photographs of a Blast Wave Traveling Over a Simulated Building.

In this study, the net racking load was fabricated by subtracting the back from the front load at some delay time $t_b = L/C_aM$ (where L = structure length, C_a = sound speed at aircraft and M = Mach number). The front load is computed as follows:

1. The air free-field wave, Δp_0, is applied to the structure. It is computed by dividing all ground free field wave pressures supplied by NASA, Δp, by 1.9. The value 1.9 is the ground reflection coefficient used by NASA.

2. To each shock in the wave is added a triangular pulse. The height is determined by the product of the structural reflection coefficient and the shock strength, Δp_0. The base of the triangle or bleed-off time is equal to $3S/C_0$ (where S is the minimum distance from the equivalent mass point to a free surface and C_0 is the speed of sound at ground level.

3. The ground reflected free-field wave, Δp_g, is added at some delay time equal to,

$$t_g = \frac{2PLOAD}{C_0}\sqrt{1 - \frac{1}{0.755\ M^2}},$$

(where PLOAD is the height of the equivalent mass above ground and the constant 0.755 is the square of the correction coefficient, 0.87, needed to compute Mach angle in a standard atmosphere). The strength of the ground reflected shock is taken as 90 percent of that for the air free field shock.

4. To each shock in the reflected ground wave is added a triangular pulse, the size and shape of which is determined by the procedure described in 2 above.

The back load is computed in the same manner as the front load with the following exceptions.

1. No reflection impulses are added.

2. Triangular impulses are subtracted. The height of the triangle is equal to the shock strength in question. The triangle base or "bleed-off time" is equal to $4S/C_0$.

C. The Plate Load:

The front loading wave minus the internal pressure wave comprises the plate loading wave. The front loading wave fabrication procedure has already been described above. The internal loading wave is more difficult to describe.

Experimental measurements at White Sands (26) and Oklahoma City (10) have indicated that the internal loading waveform is essentially a lightly damped sine wave of a frequency slightly larger than ω_0, the intercept of curves enveloping the Fourier spectrum of an N-wave. Superimposed on the damped sine wave are usually some higher frequency perturbations.

This can be explained in the following manner. Since reflectivity increases and transmissibility decreases with increasing forced frequency, the initial response of an element (and hence, the internal pressure) is roughly the transient response of the first mode of the element to a step input. Superimposed on the internal pressure wave, however, is the forced response of the element at the fundamental frequency of the boom wave, approximately $\frac{1}{\tau}$ (τ = wave duration). In the free vibration interval, the internal wave must take on the free vibration frequency characteristics of the element. The net observed internal wave is a damped sine wave having a frequency of roughly $1/1.5\tau$.

The word "element" has been used in a general sense. In fact, the entire structure loaded and not just a wall or a window within the structure must be considered as the "element" when speaking of the internal wave. All parts of the structure, therefore, participate in the internal wave fabrication.

It is obvious that a detailed theory for fabricating this wave must take more time for thought than that available in the study. For this reason and because empirical fabrication techniques have been used in other parts of the procedure, the internal wave is treated herein simply as follows:

$$\Delta p_i(t) = P_F\,(2-R_s)e^{-\beta\omega t}\sin \omega t \qquad (9)$$

where $\Delta p_i(t)$ = the internal wave pressure at time t,

P_F = the maximum free-field pressure on the element in question,

R_s = reflectivity coefficient,

[redacted]

ζ = damping factor resulting from leakage and internal damping of structural elements, and

α = $2\zeta/1.5\tau$.

Observations (26) have revelaed that very flexible structures or structures with large windows have a reflectivity coefficient of about 1.4. Structures or rooms of medium stiffness and with smaller windows have a reflectivity coefficient of about 1.5. Relatively, stiff structures with few of small windows have a reflectivity coefficient of about 1.7.

An example of fabricating the plate loading wave is shown in Fig. 2. The wave fabricated resembles net loading waves described in (26) and (17) quite well.

D. The Roof Load:

The roof loading wave is fabricated in the same manner as the plate loading wave with the following exception. The wave reflected from the ground does not, in most instances, load the roof directly but must "bleed around" the edge of the roof. From observations which confirm this line of reasoning (26) the ground reflected wave portion of the front loading wave is treated in the same manner at the back loading wave.

[redacted]

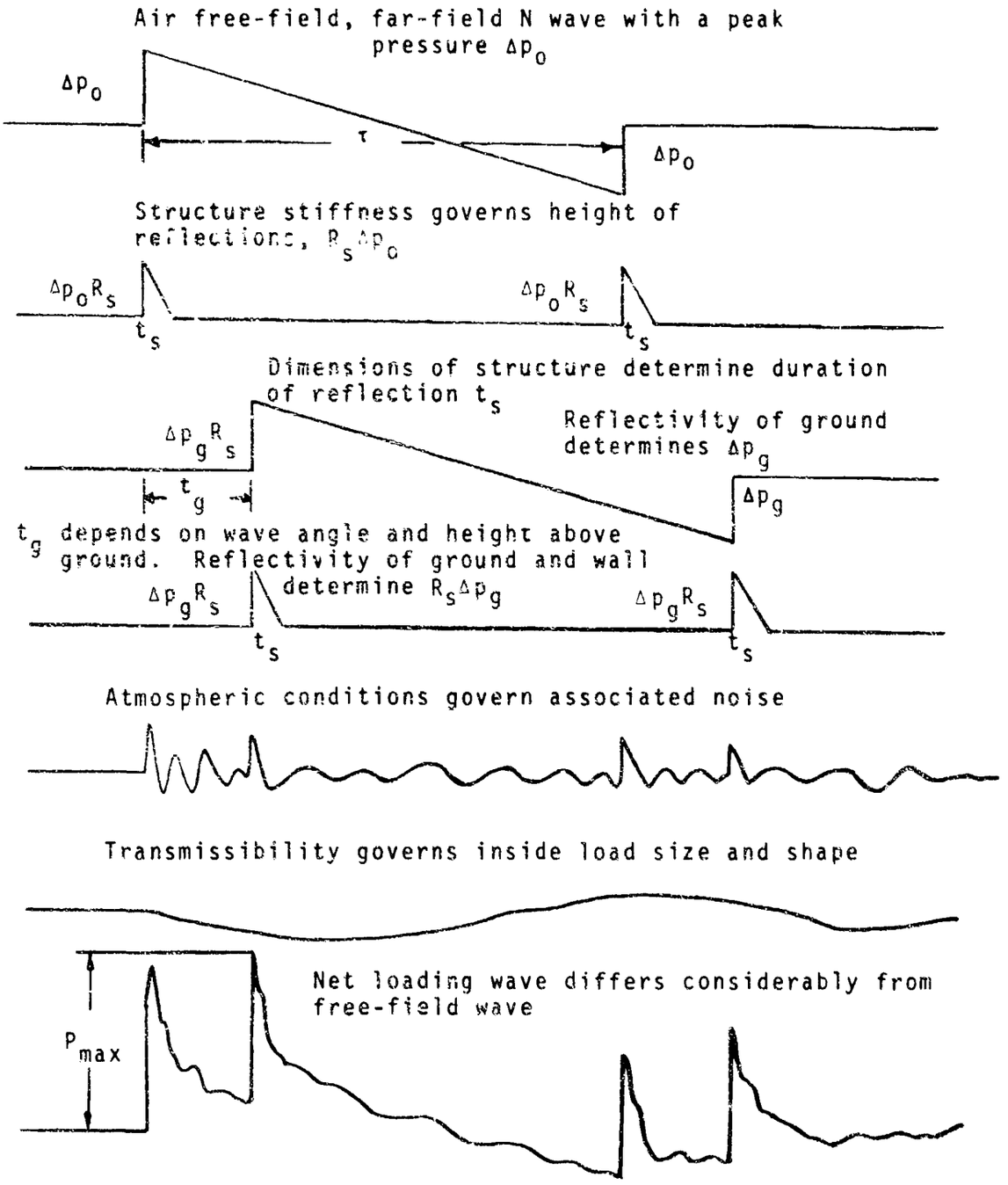


Figure 2 - Net load is the summation of many parameters. The above example shows how a far-field N wave can be fabricated for plate or diaphragm load. The same technique can be used for racking loads and near-field boom waves.

V MODELING AND SELECTION OF ELEMENTS FOR TEST

A. Selection:

Just as all people are different, so too are all structures different. As a matter of fact, there may be more differences in structures than in people from the standpoint of a transfer function and, therefore, intensity. Several scales of "responsiveness" to sound have been described for people in reference (9). These scales are based on the judgment of the investigator citing the scale and his impression of the mean response characteristic of a human being. We are not yet at the stage of being able to say what the mean characteristic of all the structures across the nation may be. A selection of elements for test must be made, however.

The Edwards AF Base Sonic Boom Experiment has as its structural subjects three buildings which are considered to be "representative". They are generally described by the following:

1. One story house - This dwelling is roughly 28 feet by 40 feet in plan. It has a living room, kitchen, family room and three bedrooms. The construction is of wood framing materials, wood siding and gypsum board.

2. Two story house - The two story house has in addition to the rooms in the one story house, a dining room. There are roughly 2,000 square feet internally. The construction is of wood frame, wood siding and gypsum board interior.

3. Bowling Alley - This building is of interest because of the long span, low frequency roof. The building is roughly 75 feet by 120 feet with no internal posts. Four steel girders span the 120 foot length.

In addition to the two houses and bowling alley roof, two hypothetical ten story buildings having low fundamental frequencies and three windows of different size located at three different heights above ground were selected for study. Table 1 details the 19 characteristics of the window and structure elements examined.

B. Modeling Procedure:

In the aerospace industry, a detailed knowledge of an airplane or a space vehicle's character is required to insure confidence

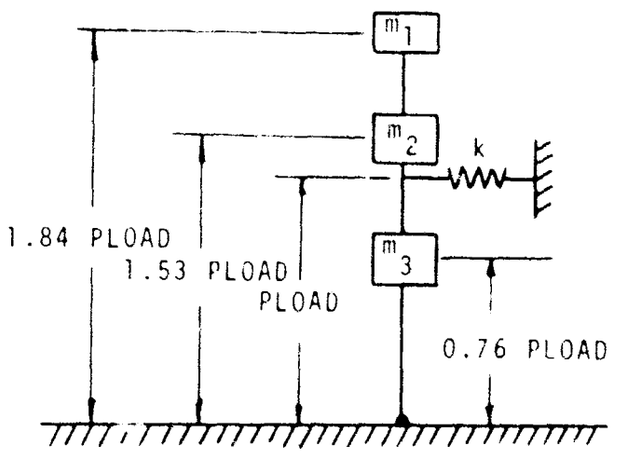
Table 1. Description Of Structural Elements Studied

No.	Element Type	Action	H(ft.)	B(ft.)	L(ft.)	PLOAD (ft.)	S(ft.)	Element Natural Frequency (hZ)	Element Natural Circular Frequency (rad./sec.)	Damping Factor	Roof Angle α (°)	R_s
1	One Story House	Rack	9.00	28.65	40.65	2.74	6.00	18.3	115.00	0.05	NA	1.7
2	One Story House	Rack	9.00	40.65	28.65	1.64	6.00	16.0	100.00	0.05	NA	1.7
3	Two Story House	Rack	18.50	31.00	27.50	7.50	12.00	9.7	61.00	0.05	NA	1.7
4	Two Story House	Rack	18.50	27.50	31.00	7.00	13.00	11.2	70.00	0.05	NA	1.7
5	Ten Story Building	Rack	100.00	50.00	50.00	50.00	25.00	1.2	7.42	0.05	NA	1.7
6	Ten Story Building	Rack	100.00	100.00	100.00	50.00	50.00	1.6	10.00	0.05	NA	1.7
7	One Story Wall	Plate	9.00	27.50	NA	4.00	8.75	15.5	97.10	0.05	NA	1.7
8	Two Story wall	Plate	18.50	31.00	NA	4.00	8.75	15.5	97.10	0.05	NA	1.7
9	One Story Roof	Roof	9.00	40.65	28.65	NA	3.00	9.3	58.40	0.05	18.4	1.4
10	Bowling Alley Roof	Roof	20.00	75.00	120.00	NA	37.50	2.0	12.56	0.05	0	1.4
11	Plate Glass @ One Story	Plate	9.00	16.00	32.00	4.00	6.00	37.8	241.00	0.01	NA	1.7
12	Plate Glass @ One Story	Plate	9.00	16.00	32.00	4.00	6.00	5.7	35.30	0.01	NA	1.5
13	Plate Glass @ One Story	Plate	12.00	60.00	40.00	6.00	6.00	2.8	17.70	0.01	NA	1.4
14	Plate Glass @ Two Story	Plate	18.50	16.00	32.00	4.00	6.00	37.8	241.00	0.01	NA	1.7
15	Plate Glass @ Two Story	Plate	18.50	16.00	32.00	4.00	6.00	5.7	35.30	0.01	NA	1.5
16	Plate Glass @ Two Story	Plate	24.50	60.00	40.00	6.00	6.00	2.8	17.70	0.01	NA	1.4
17	Plate Glass @ Ten Story	Plate	100.00	100.00	100.00	4.00	6.00	37.8	241.00	0.01	NA	1.7
18	Plate Glass @ Ten Story	Plate	100.00	100.00	100.00	4.00	6.00	5.7	35.30	0.01	NA	1.5
19	Plate Glass @ Ten Story	Plate	100.00	100.00	100.00	6.00	6.00	2.8	17.70	0.01	NA	1.4

in design. In civil engineering, however, the extra money that may be required to insure confidence in design is insignificant compared to testing costs. Too, dynamics is seldom a consideration to the civil engineer. For these and other reasons, the dynamic characteristics of buildings and their elements are, for the most part, unknown. For example, references (26) (28) and (29) are about the only test reports on the dynamic properties of residential buildings or their elements. As a result of the above discussion, a simplified modeling technique was used to describe the elements tested. Reference (23) describes the procedure in detail and reference (27) justifies its use.

Racking Mode - The racking mode of vibration refers to the shear distortion that a structure undergoes as the result of lateral loads. In the simplified method of analysis, the shear walls provide the spring while the mass is distributed according to design of the house and unit weights of the materials used. The unit stiffness used for a shear wall element was measured at White Sands (26) and the value determined used to calculate frequencies in the report. The point of load application (PLOAD) was selected as the gravity center of the loaded wall shape.

An example for calculating the natural frequency of a shear beam is given below for the one story structure.



where: k = stiffness of shear wall at point PLOAD, 1.045×10^6 lb/in.,

m_1 = mass of truss, wood roofing, and shingles, 8420 lb.,

m_2 = mass of gypboard ceiling and insulation, 4650 lb., and

m_3 = mass of inner and outer walls, 11,880 lb.

In the above example, the unit shear stiffness of similarly built structures has been observed to be 4.44×10^3 lb/in. ft. (26). The shear area available in the N-S direction of the structure is 8 ft. x 153 ft. = 1224 ft.^{2}. PLOAD is 5.26 ft. above the slab. Therefore,

$$k = \frac{4.44 \times 10^3 \times 1224}{5.26} \quad \frac{\text{lb.}}{\text{in.}} .$$

The natural frequency is:

$$f_n = \frac{1}{2\pi} \left[\frac{1.045 \times 10^6 \times 386}{1.84 \times 8420 + 1.53 \times 4620 + 0.78 \times 11,880} \right]^{1/2} \text{cps.}$$

$$f_n = 18.3 \text{ cps.}$$

Racking frequencies of the other elements selected were calculated in the same manner. As a check, the measured racking frequency of the N-S direction of the two story structure was about 8.8 cps (30). The calculated value is 9.7 cps.

Plate Mode - The frequency for the plate or diaphragm mode of vibration for a wall element having studs, outside sheathing and a gypsum board interior was computed assuming it to be a simply supported beam. A full description of the procedure is given in reference (23). The value computed, 15.5 cps, agrees well with the value observed, about 16 cps (30). However, the record shown in (30) indicates that a higher mode is participating in the vibration history to some minor extent.

Windows were assumed to be plates rather than simple beams. This is probably a good assumption for smaller windows but it may be slightly in error for larger windows. Data in reference (17) indicates that the frequencies computed for the 50 ft.^{2} and the 100 ft.^{2} windows are reasonable, however. A detailed description of the method for computing the plate frequency is given in reference (23).

VI ANALYSIS OF RESULTS

A. General:

The 19 elements described in Table 1 were subjected to 8 near-field and 8 far-field SST loading waves fabricated via the procedures described in the foregoing using the data in Figs. 8-10. The three XB-70 and the B-58 and F-104 waves (Figs. 11-15) were also applied to all elements. No perturbations were used on the data waves. All results are tabulated in Appendix B.

The near-field waves appearing in Figs. 3-10 were calculated by H. W. Carlson of NASA, Langley Research Center for the contractor aircraft characteristics and conditions noted in the figures. The most appropriate lift conditions for the proposed contractor aircraft at the various positions within the flight profile were used. A description of the theory used by Carlson is given in reference (6). The maximum far-field overpressure values were also calculated by Carlson while the far-field wave durations were computed from equation (6) in reference (4) using the atmospheric constants given for the 1962 standard atmosphere (31). The XB-70, B-58 and F-104 boom data waves shown in Figs. 11-15 were taken from references (10) and (11). The far-field overpressures for these flights were computed from the nomograms in reference (32) and the wave duration from equation (6) in reference (4).

The figures appearing in Appendix A give examples of the loading waveforms fabricated and the instantaneous values of P(eff). The free-field waveforms are plotted as well for comparison purposes. Elements 13 and 1 are used as examples.

Figures A-3 to A-10 in Appendix A have no "noise"perturbation while Figs. A-11 to A-18 do. The "noise" or rounding process tends to lower the intensity for the element considered and for all elements as well. Tables in Appendix B give P(max), P(eff) and DAF values computed for eight representative waveforms with and without the rounding. The odd tabulated values starting from left to right in these tables have no rounding whereas the even values do. Removal of just a little energy at the first of the wave has a considerable effect on the intensity derived. This suggests that maximum overpressure is an important parameter influencing intensity.

Figures A-3 to A-42 can be used to compare the near and far-field effects on the two elements considered for both contractor wave-

forms. One can see that the near-field loading waves seem to cause lower values of response than do those from the far-field. Only a detailed analysis of all the loading and response plots will show which simple parameters in a boom wave govern response, however.

These plots, along with hundreds of others, generated for the remaining elements show that the loading waveforms are quite different from the free-field waves. And indeed, response data shown in reference (30) look somewhat similar to the P(eff) wave shown. We are, however, quite skeptical of the large roof and large building racking waves computed for the F-104 airplane. A good deal of loading data on big buildings or big roofs must be derived in experimental programs before the theoretical values computed can be trusted.

F-104, B-58, and XB-70 data and the associated far-field waveforms are plotted in Figs. A-48 to A-52 for one example of the racking response, element number 1. Differences in response may be noted, but they are usually within one standard deviation of one another as is shown in Appendix B.

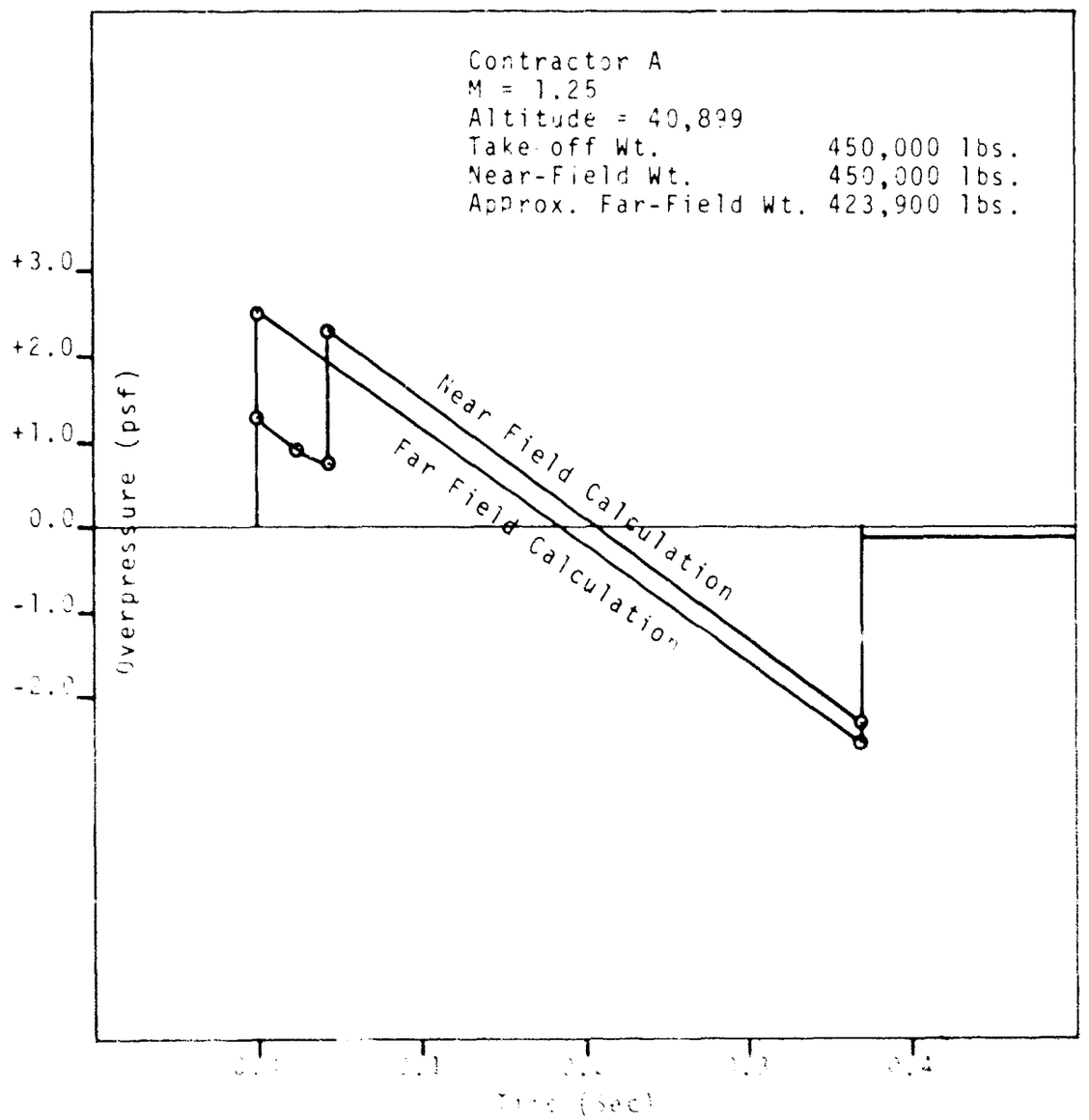


Figure 3. Free-Field, Contractor A SST, Condition 1

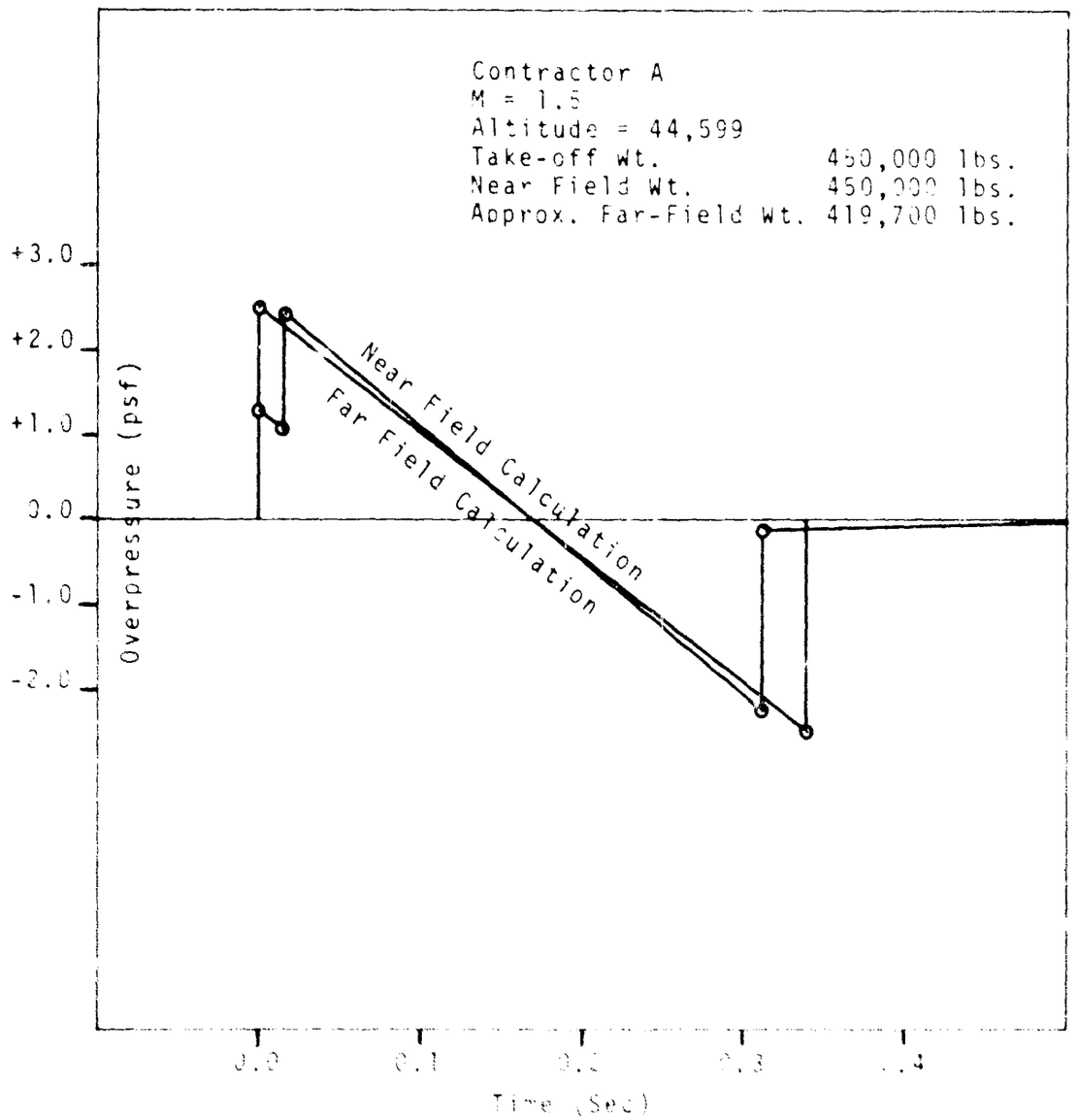


Figure 4. Free-Field, Contractor A SST, Condition 1

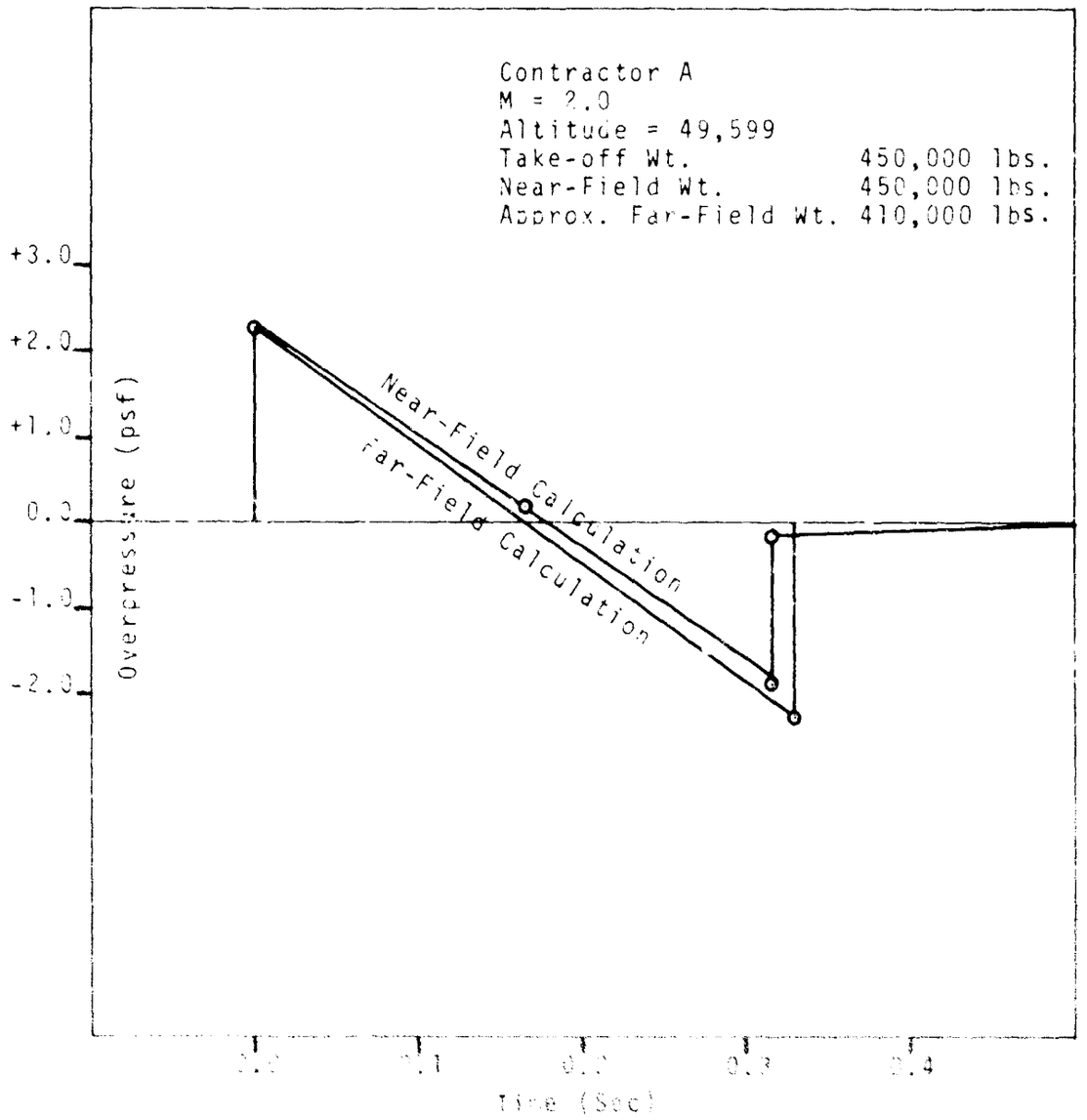


Figure 5. Free-Field, Contractor A SST, Condition 3

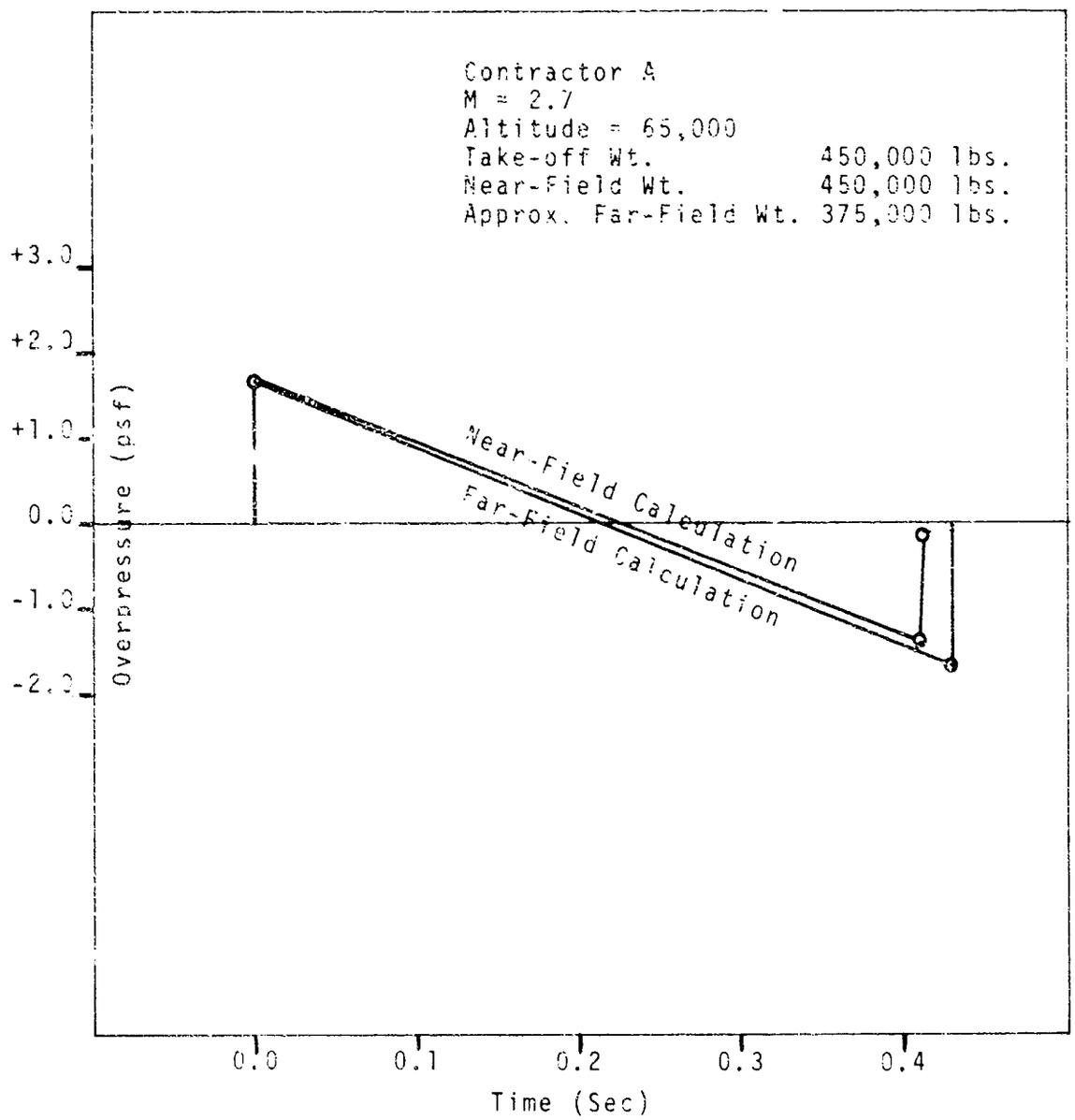


Figure 6. Free-Field, Contractor A SST, Condition 4

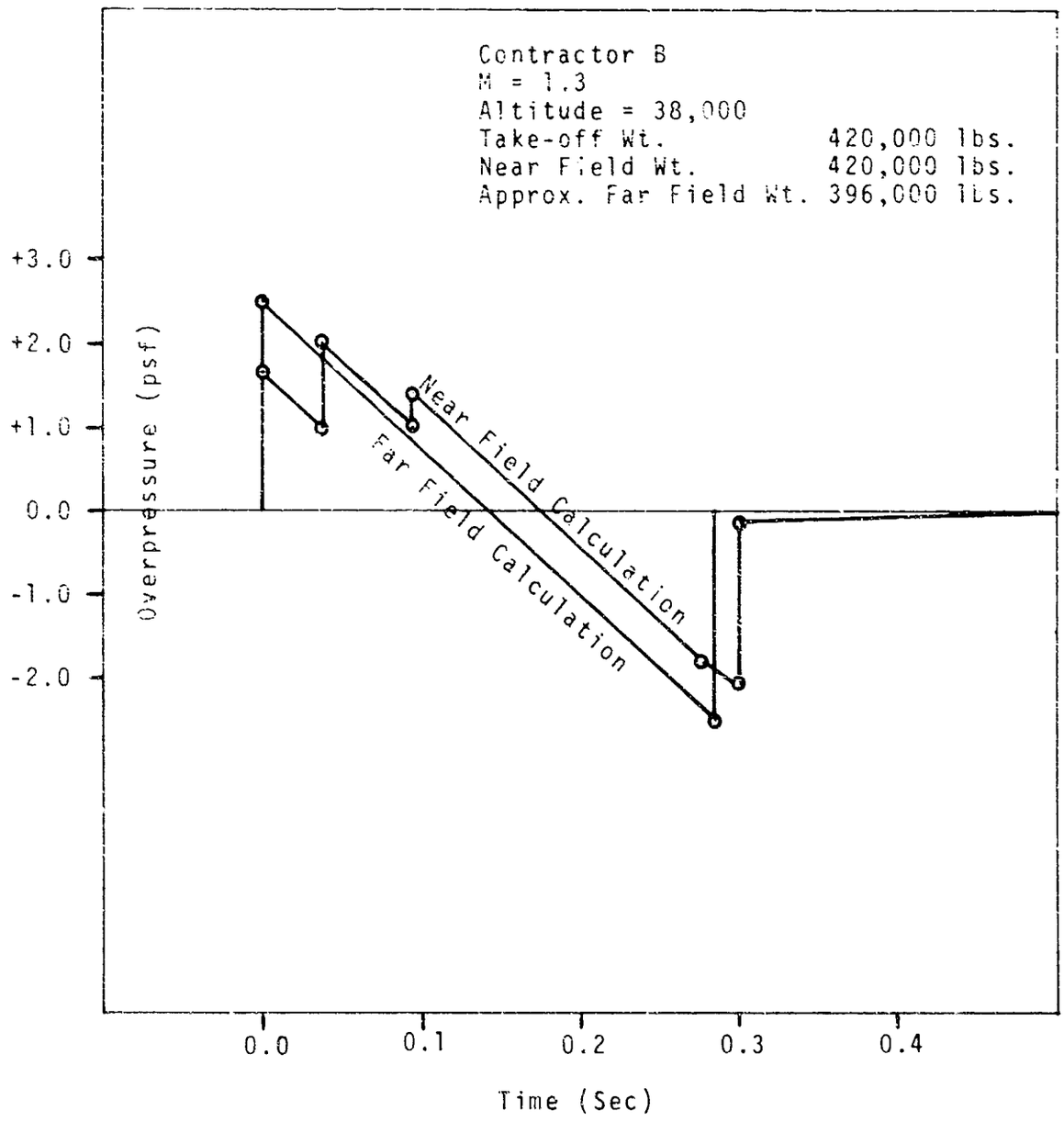


Figure 7. Free-Field, Contractor B SST, Condition 1

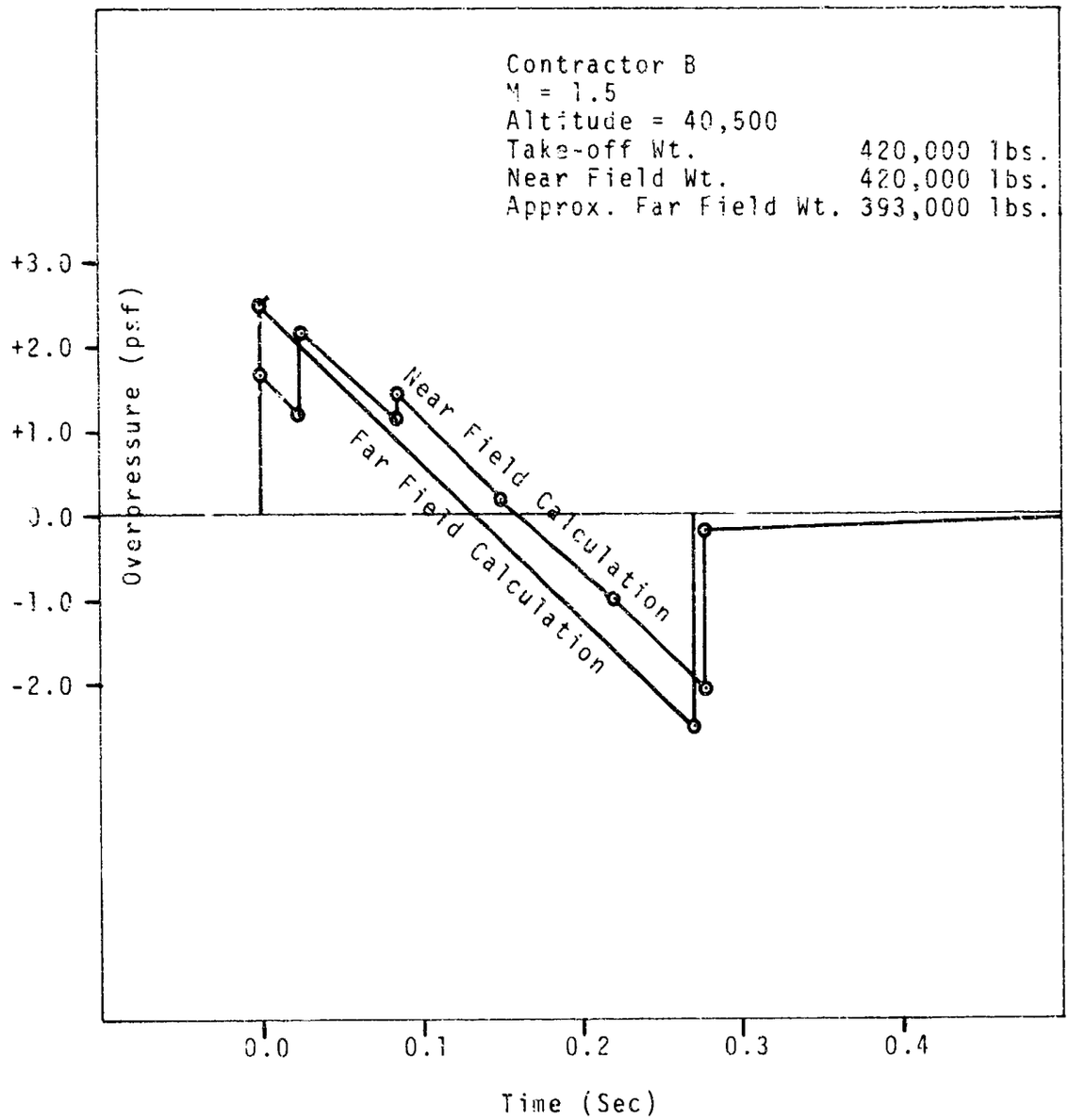


Figure 8. Free-Field, Contractor B SST, Condition 2

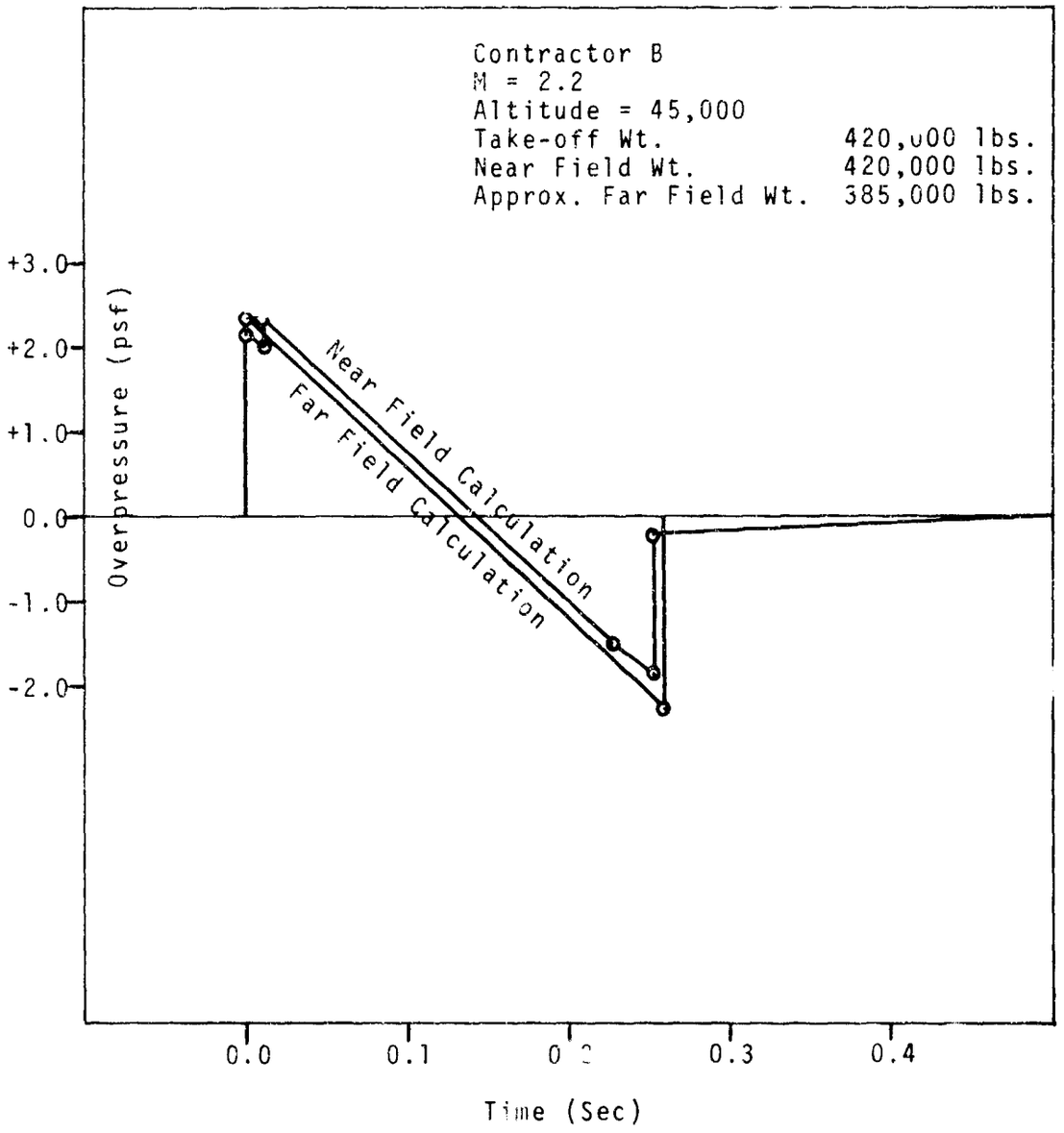


Figure 9. Free-Field, Contractor B SST, Condition 3

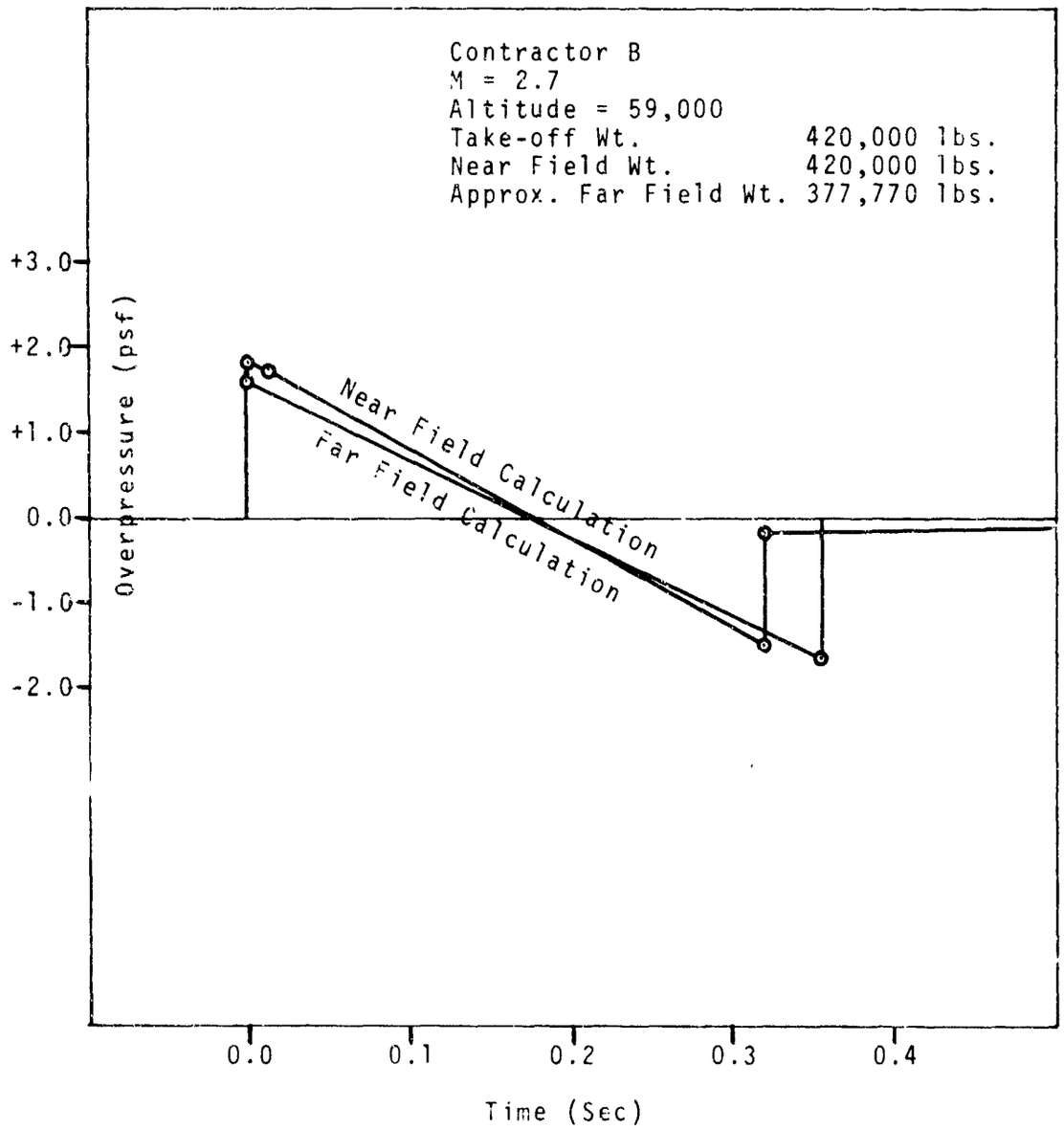


Figure 10. Free-Field, Contractor B SST, Condition 4

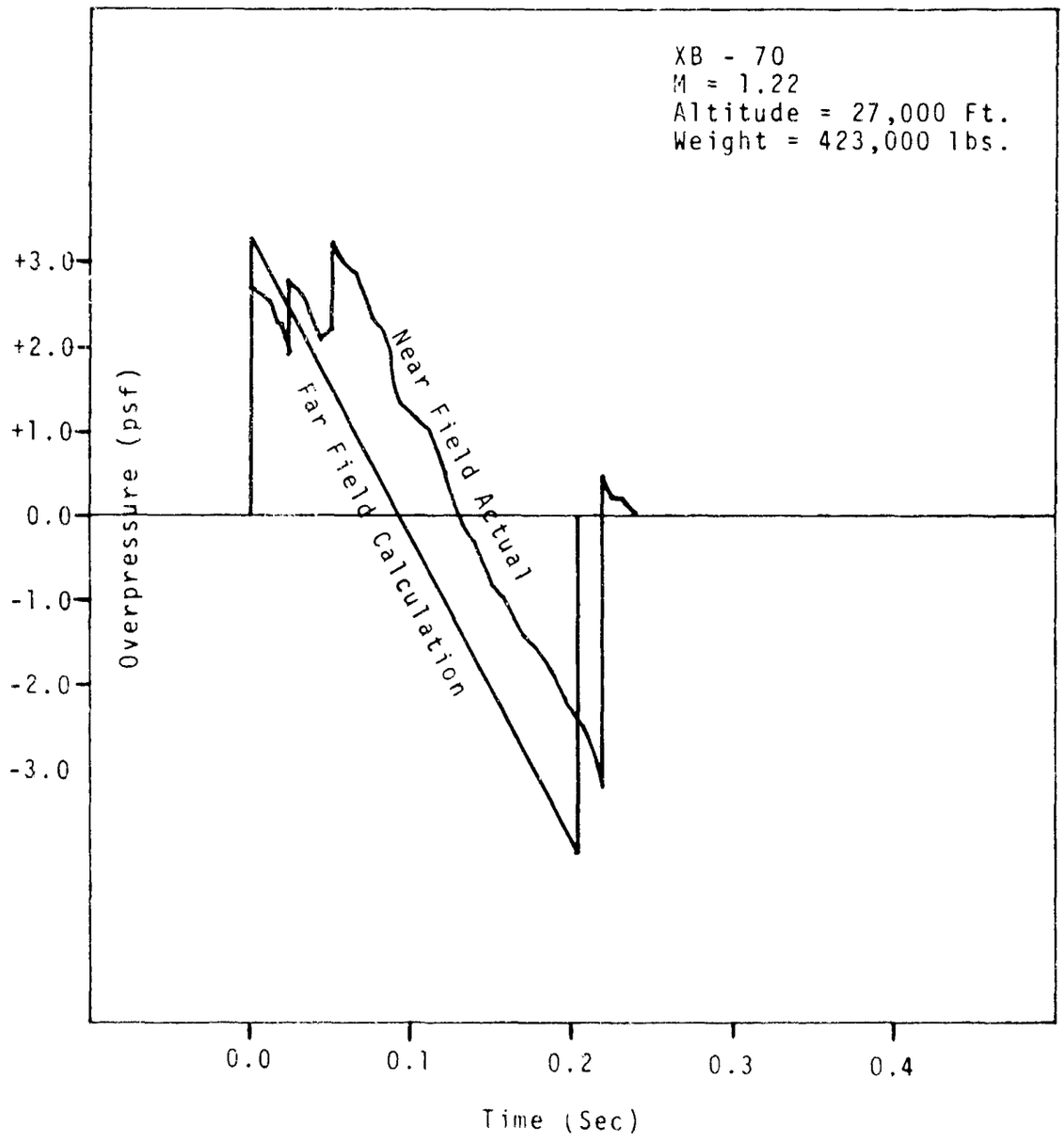


Figure 11. Free-Field, XB-70, Mach 1.22

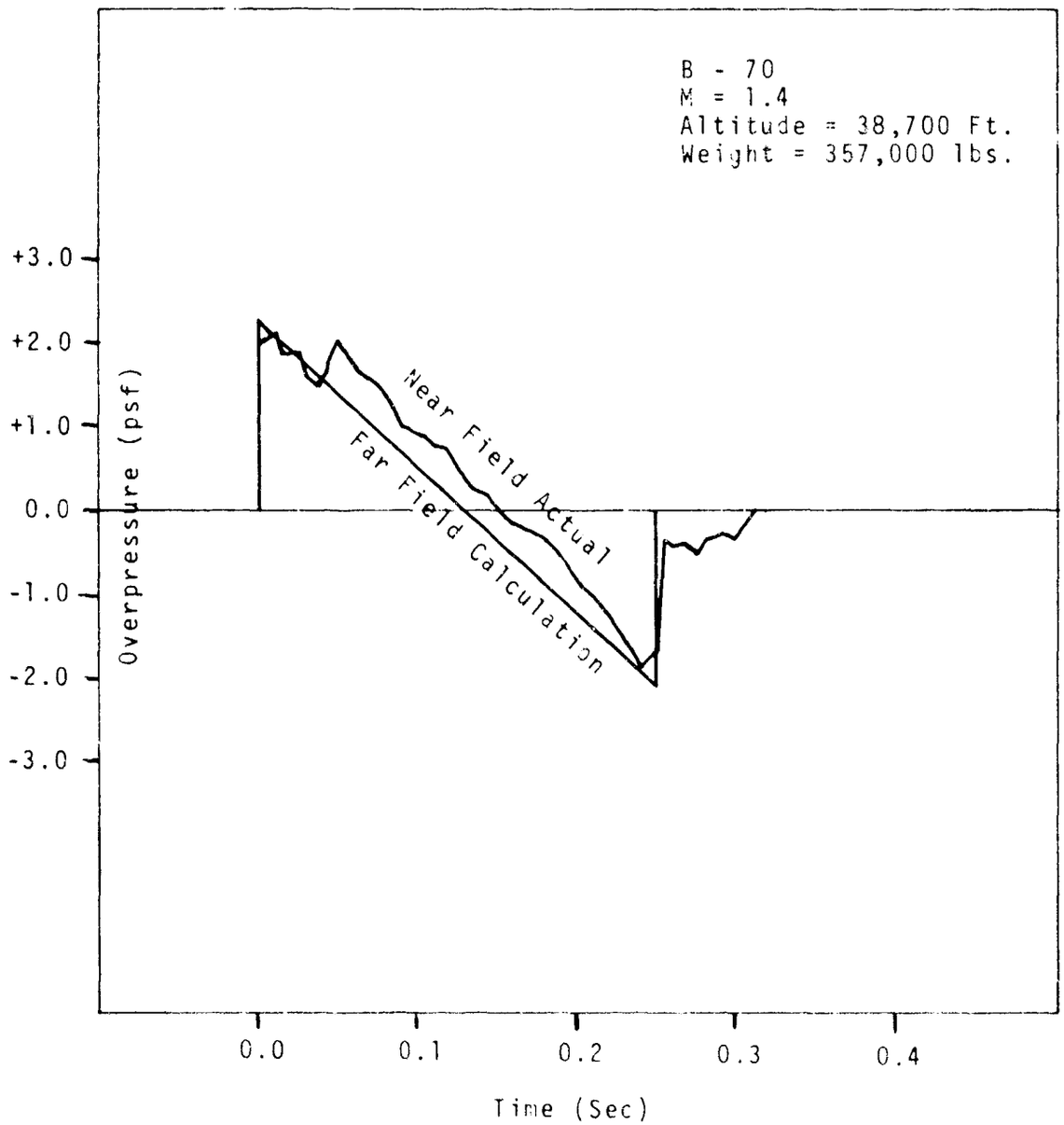


Figure 12. Free-Field, XB-70, Mach 1.40

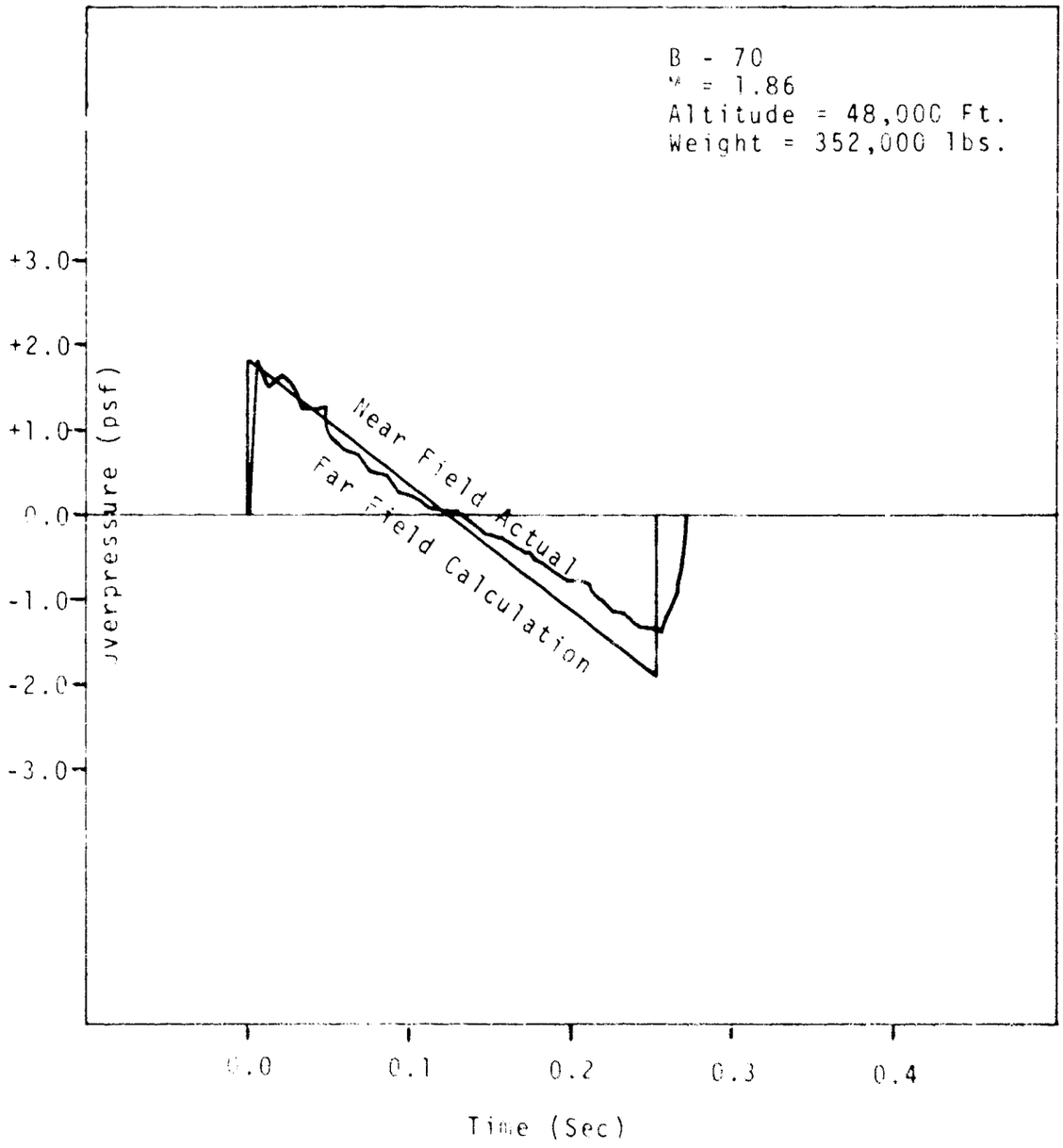


Figure 13. Free-Field, XB-70, Mach 1.86

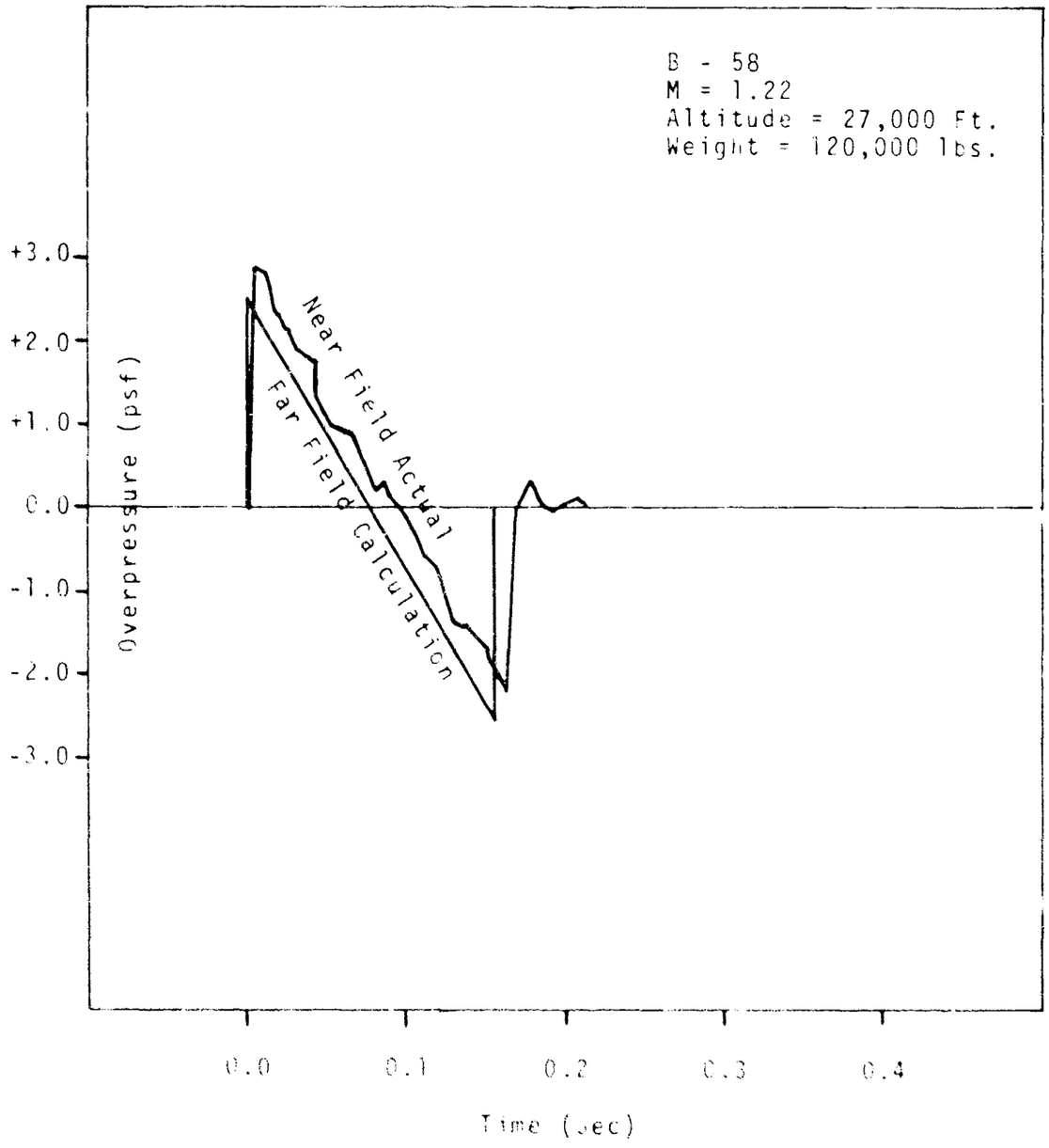


Figure 14 Free-Field, B-58, Mach 1.22

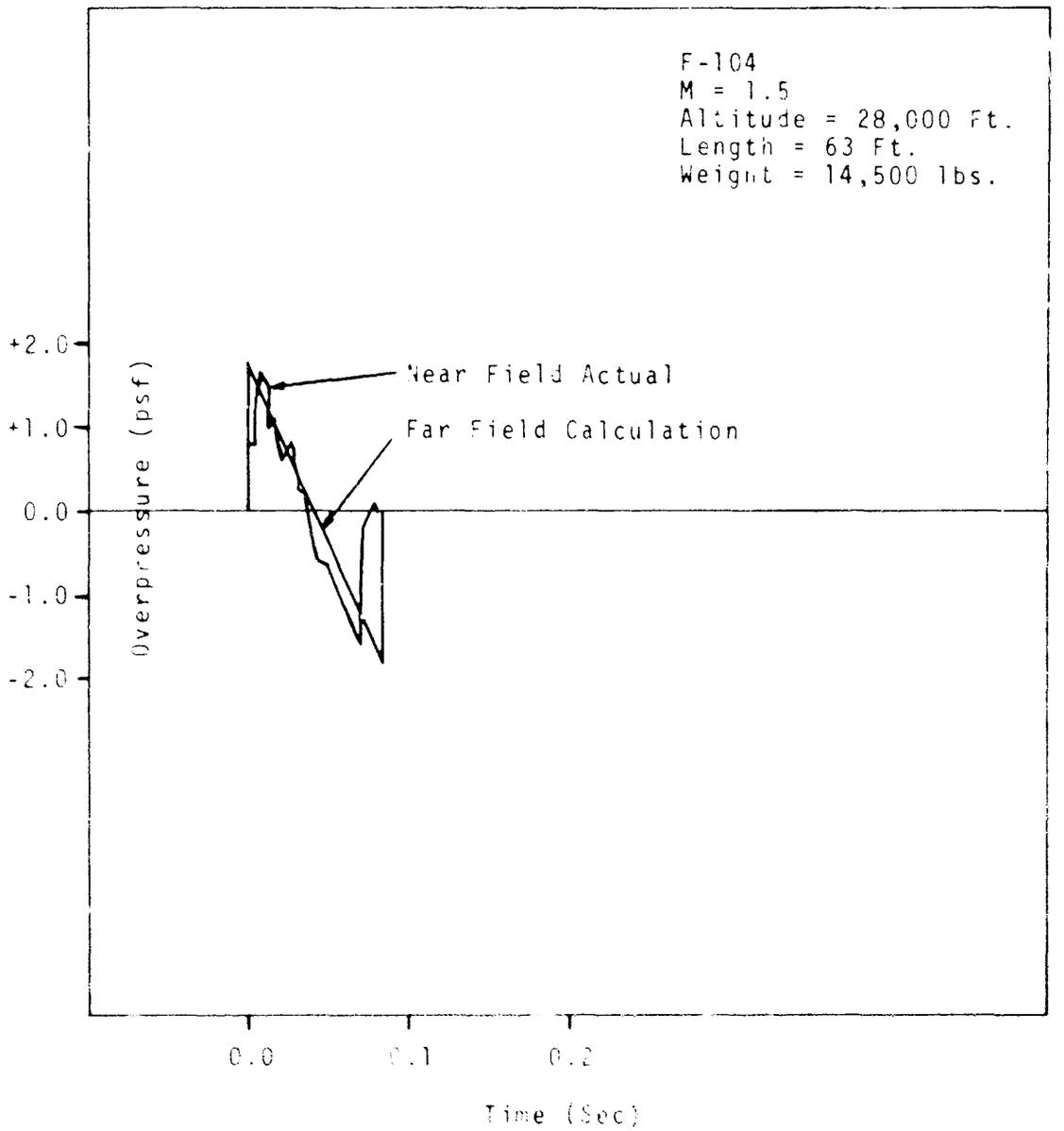


Figure 15. Free-Field, F-104, Mach 1.50

B. Comparison of Near-Field With Far-Field Intensities:

Charts plotting the mean values of intensity and the associated standard deviations for each near-field and its counterpart far-field wave are shown in Figs. 16-52. The data which produced these plots are given in Appendix B. Note that the individual maximum values of P(max), P(eff), and DAF are shown along with mean values and standard deviations.

It can be easily seen that the near-field waves produce an intensity lower than that generated by the far-field waves. The differences are greater than simply the differences in peak overpressure. Further, all the near-field waves were computed assuming a weight equal to the take-off weight while the far-field waves used the actual weight at various parts of the flight profile. In other words, a normalizing factor accounting for weight differences would lower the near-field intensities computed even further.

How much lower are the near-field intensities than the far-field intensities? What is causing the intensities to be lower? To answer these questions the ratios of the far to near-field mean values of P(max), P(eff) and DAF regarding the 19 elements were averaged. The results are presented below:

Ratios for Average Far vs. Near-Field Values of P(max), P(eff) and DAF*

	Contractor A			Contractor B		
Condition	P(max)	P(eff)	DAF	P(max)	P(eff)	DAF
1	1.28	1.27	1.03	1.32	1.41	1.02
2	1.27	1.24	0.97	1.33	1.24	0.95
3	1.04	1.09	1.05	1.05	1.08	1.04
4	1.03	1.01	0.97	1.00	1.02	1.01

The above table shows that as the boom changes from near-field to far-field conditions (1 to 4) the intensities [P(eff)] equalize. This seems reasonable since the waveforms in condition

*not normalized for weight differences. All values for P(max) and P(eff) would be larger if normalizing were done.

COMPARISON OF NEAR-FIELD WITH FAR-FIELD EFFECTIVE STATIC LOAD

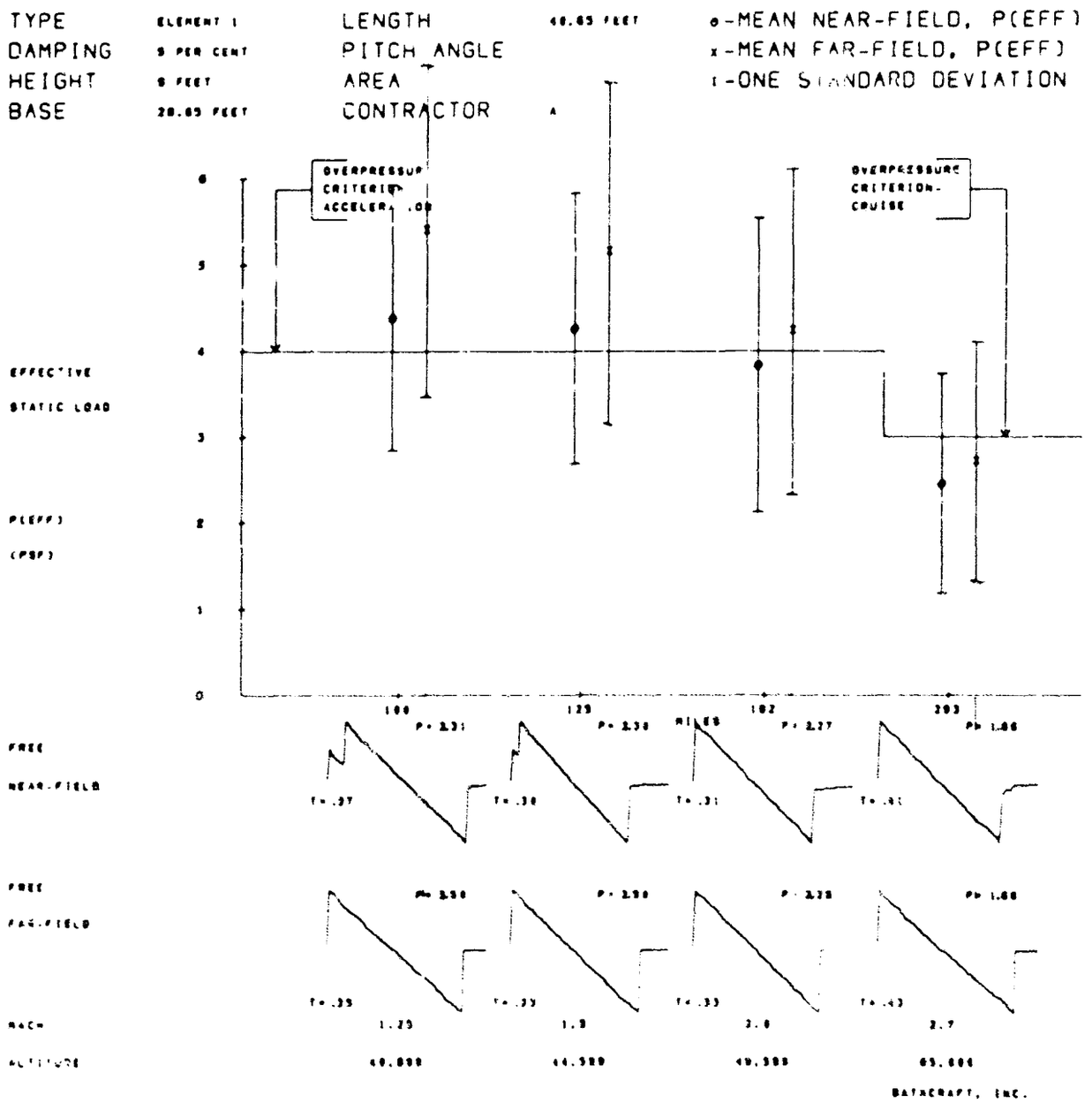


Figure 16

COMPARISON OF NEAR-FIELD WITH FAR-FIELD EFFECTIVE STATIC LOAD

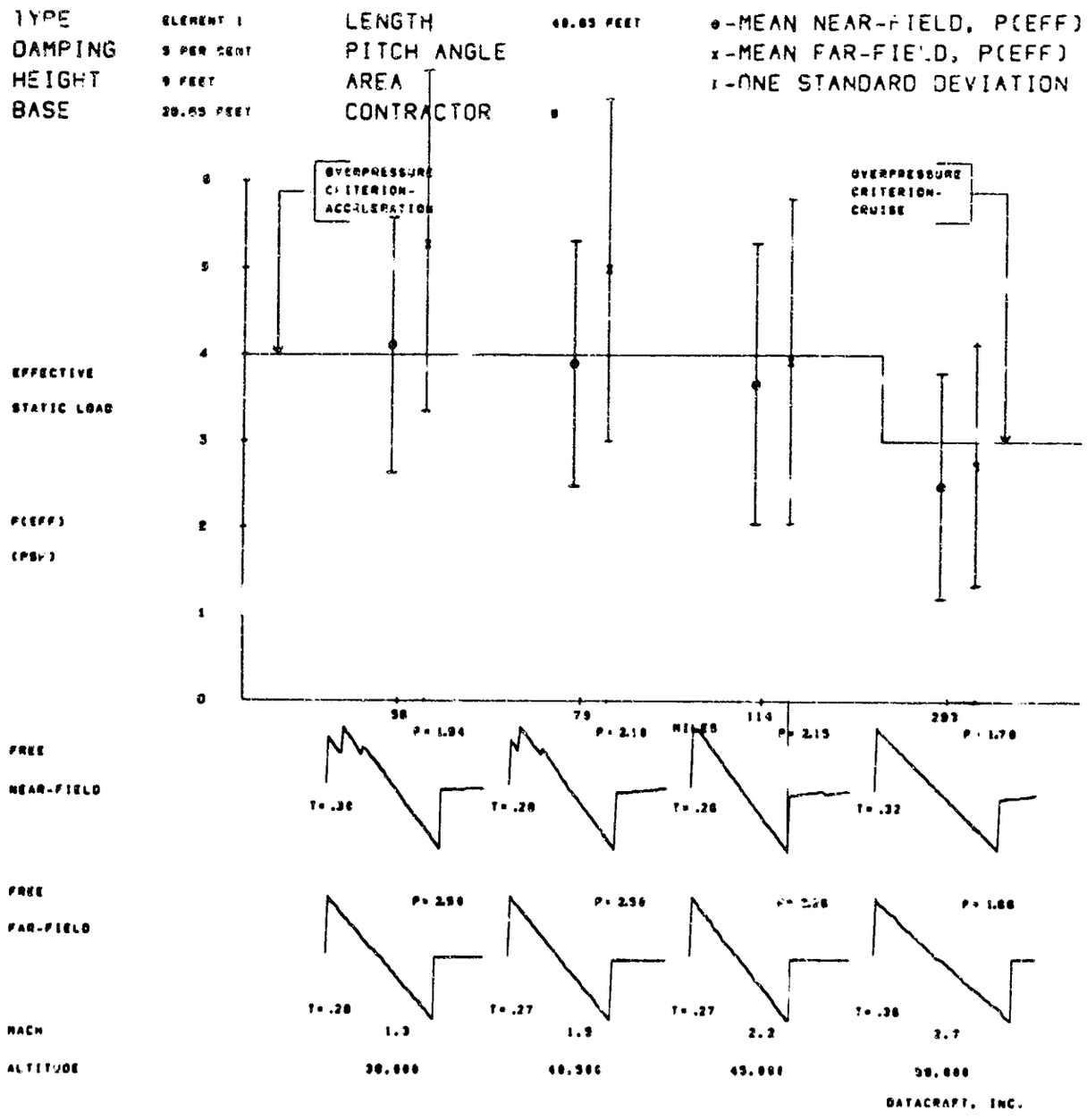


Figure 17

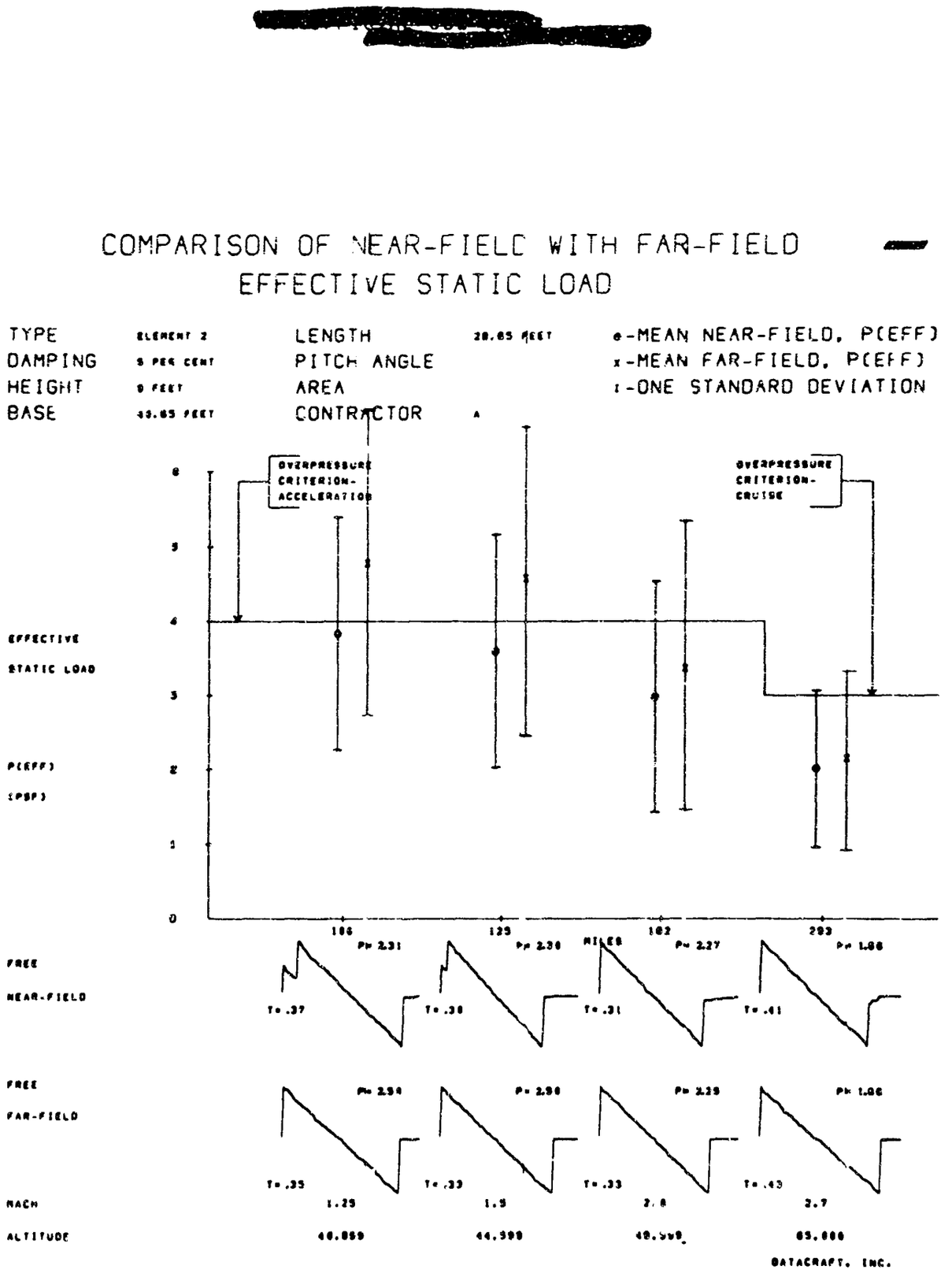

COMPARISON OF NEAR-FIELD WITH FAR-FIELD
EFFECTIVE STATIC LOAD
TYPE
ELEMENT 2
DAMPING
5 PER CENT
HEIGHT
0 FEET
BASE
33.65 FEET
LENGTH
28.65 FEET
PITCH ANGLE
AREA
CONTRACTOR
A
o-MEAN NEAR-FIELD, P(EFF)
x-MEAN FAR-FIELD, P(EFF)
I-ONE STANDARD DEVIATION
OVERPRESSURE CRITERION-ACCELERATION
OVERPRESSURE CRITERION-CRUISE
EFFECTIVE STATIC LOAD
P(EFF) (PSF)
0
1
2
3
4
5
6
106
125
182
293
MILES
FREE NEAR-FIELD
Pk 2.31
Pk 2.30
Pk 2.27
Pk 1.86
Te .37
Te .36
Te .31
Te .41
FREE FAR-FIELD
Pk 2.94
Pk 2.90
Pk 2.29
Pk 1.06
Te .35
Te .33
Te .33
Te .43
MACH
1.25
1.5
2.0
2.7
ALTITUDE
40,000
44,000
48,000
65,000
DATACRAFT, INC.

Figure 18

COMPARISON OF NEAR-FIELD WITH FAR-FIELD EFFECTIVE STATIC LOAD

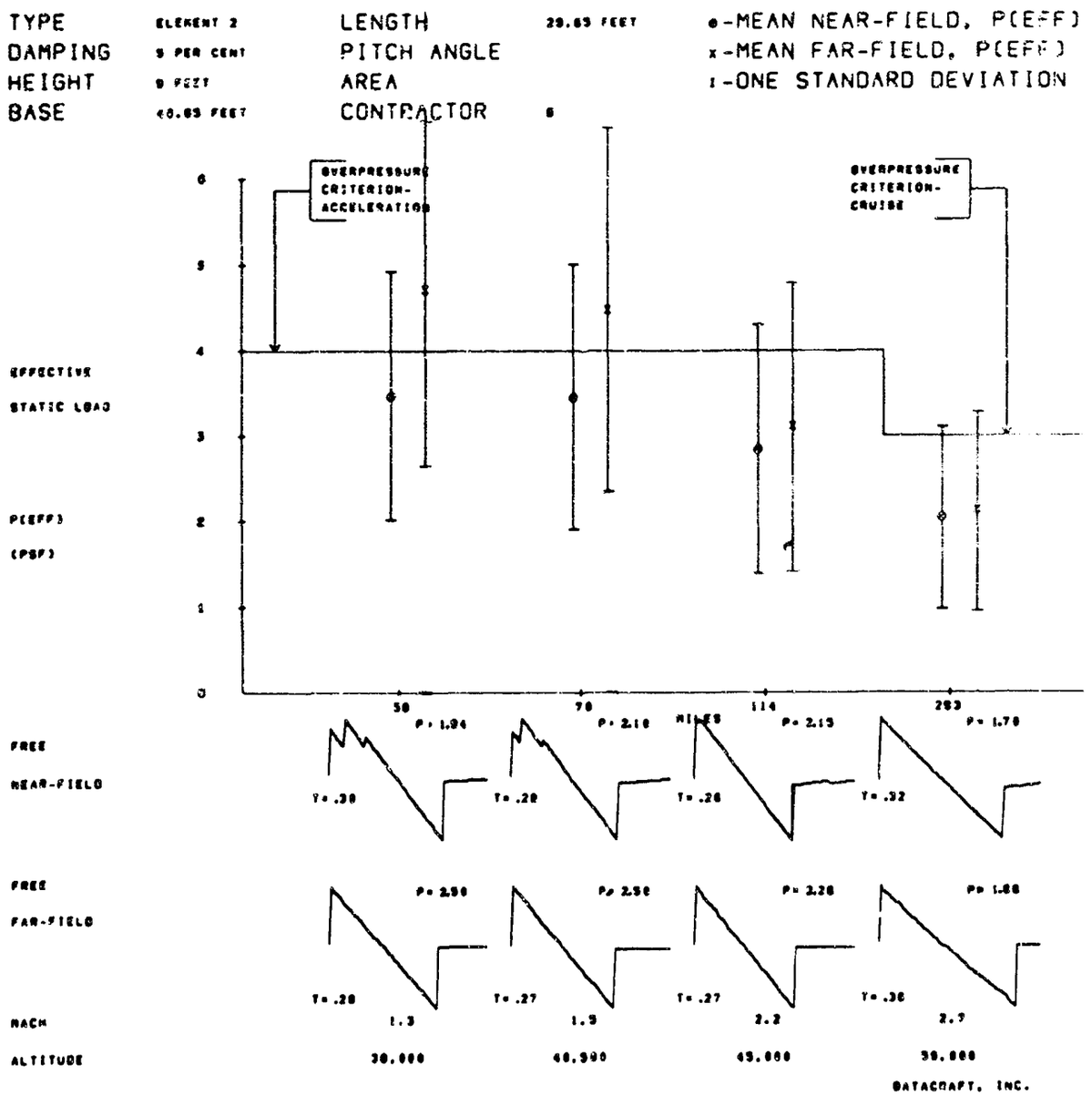


Figure 19

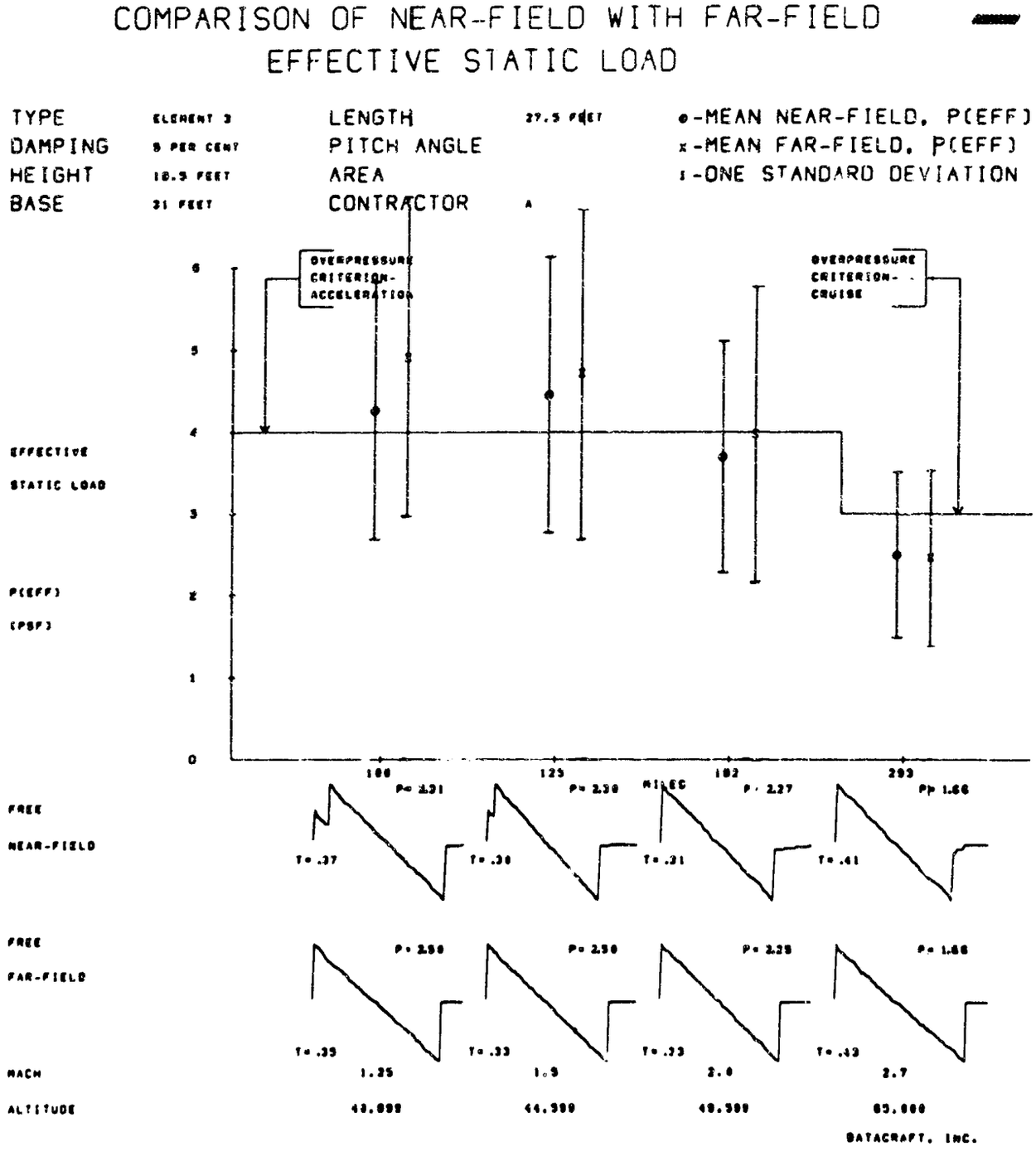

COMPARISON OF NEAR-FIELD WITH FAR-FIELD
EFFECTIVE STATIC LOAD
TYPE
ELEMENT 3
DAMPING
5 PER CENT
HEIGHT
18.5 FEET
BASE
31 FEET
LENGTH
27.5 FEET
PITCH ANGLE
AREA
CONTRACTOR
A
o-MEAN NEAR-FIELD, P(EFF)
x-MEAN FAR-FIELD, P(EFF)
I-ONE STANDARD DEVIATION
OVERPRESSURE CRITERION-ACCELERATION
OVERPRESSURE CRITERION-CRUISE
EFFECTIVE STATIC LOAD
P(EFF) (PSF)
0
1
2
3
4
5
6
100
125
182
293
FREE NEAR-FIELD
FREE FAR-FIELD
MACH
1.25
1.5
2.0
2.7
ALTITUDE
43,000
44,500
49,500
65,000
DATACRAFT, INC.

Figure 20

COMPARISON OF NEAR-FIELD WITH FAR-FIELD EFFECTIVE STATIC LOAD

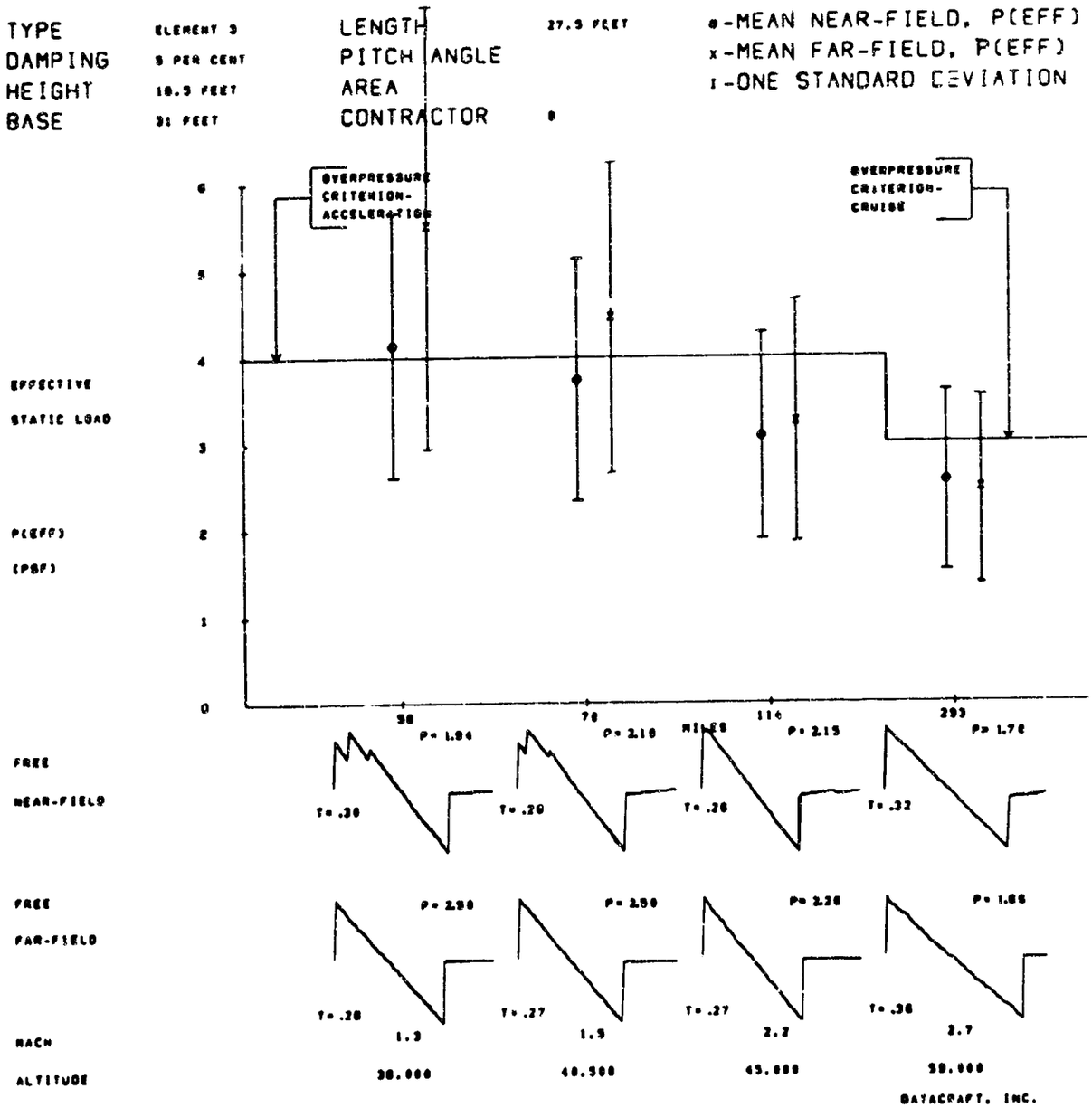


Figure 21

COMPARISON OF NEAR-FIELD WITH FAR-FIELD EFFECTIVE STATIC LOAD

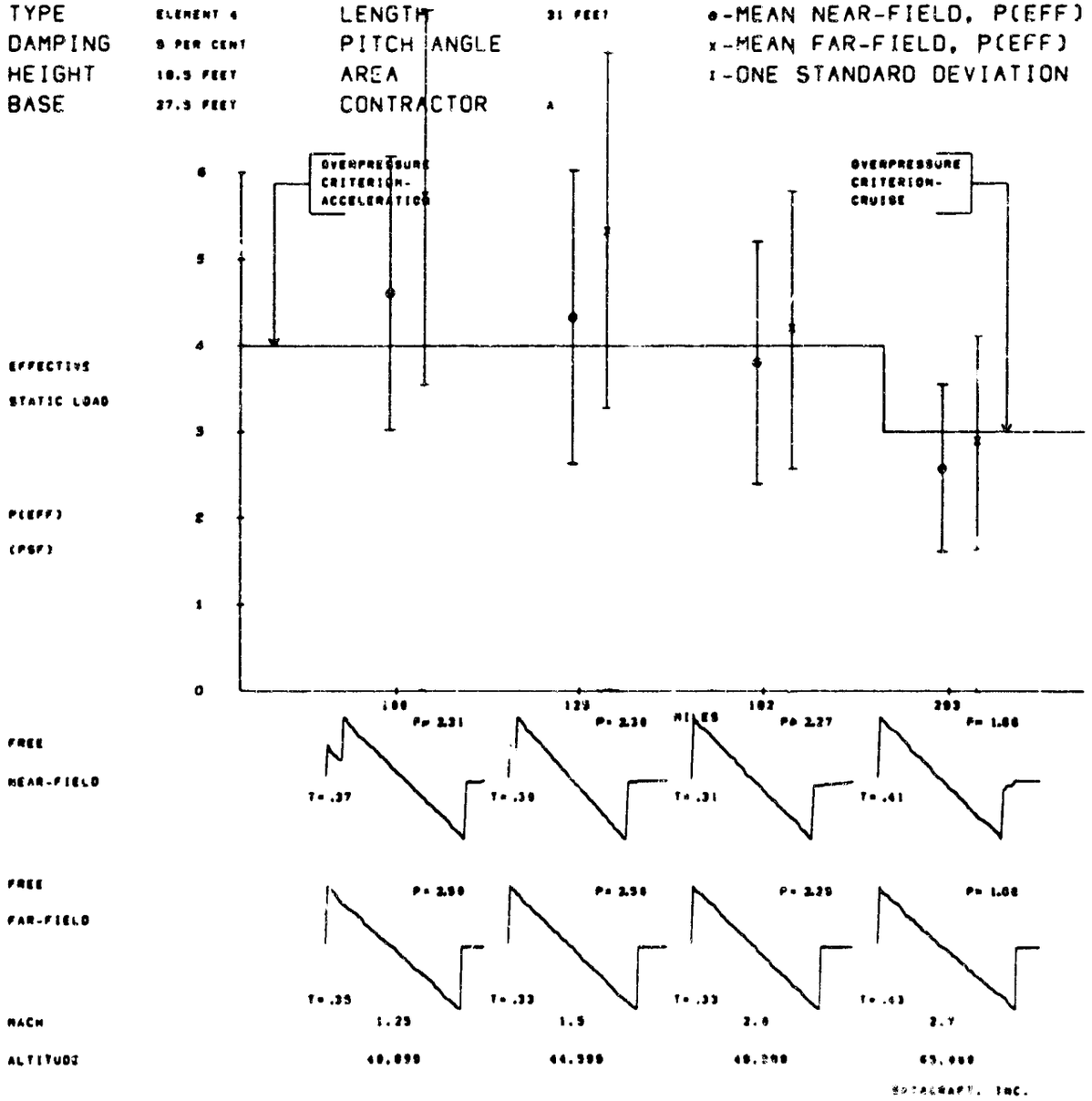


Figure 22

COMPARISON OF NEAR-FIELD WITH FAR-FIELD EFFECTIVE STATIC LOAD

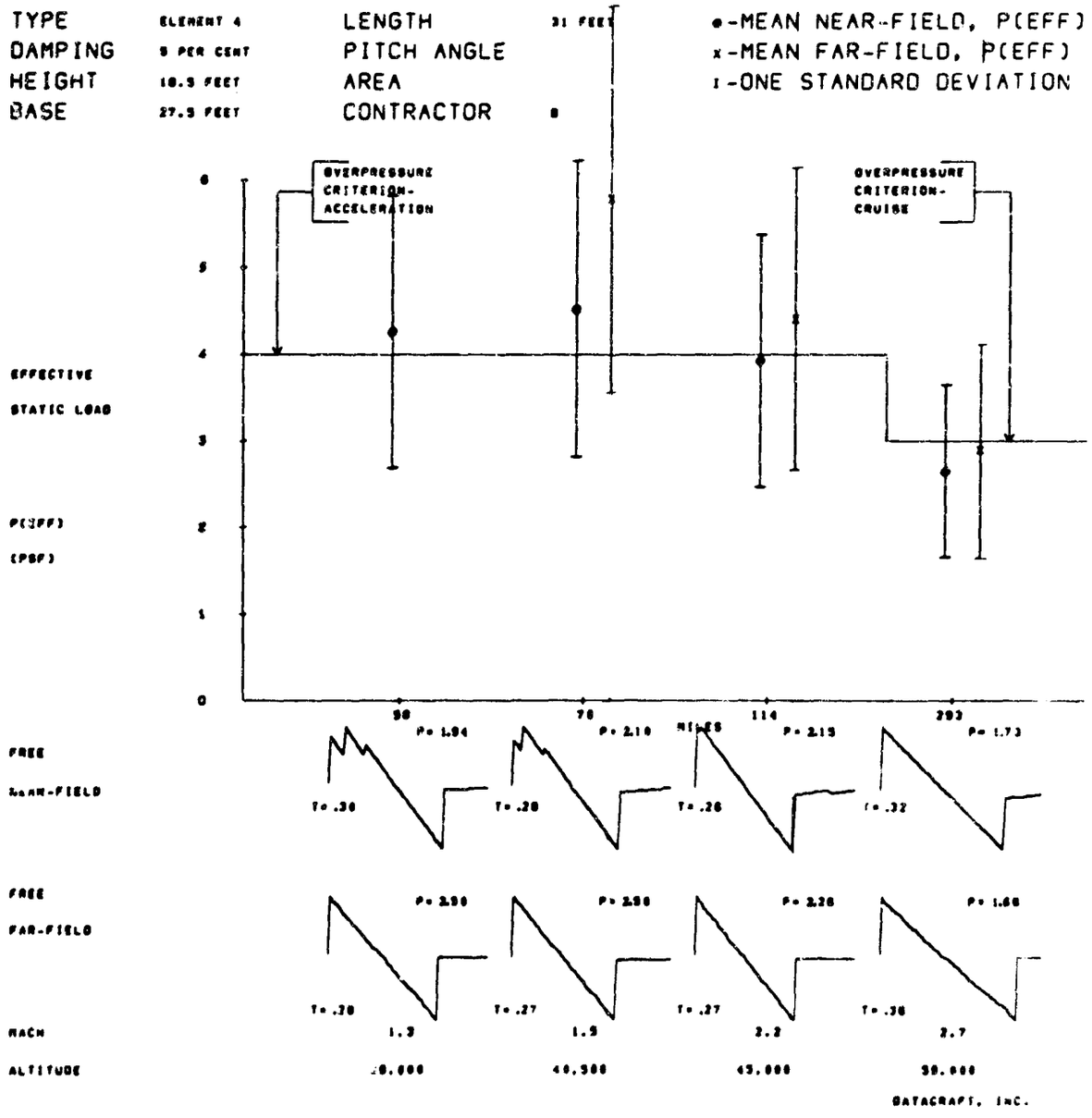


Figure 23

COMPARISON OF NEAR-FIELD WITH FAR-FIELD EFFECTIVE STATIC LOAD

TYPE	ELEMENT 5	LENGTH	50 FEET	●-MEAN NEAR-FIELD, P(EFF)
DAMPING	5 PER CENT	PITCH ANGLE		x-MEAN FAR-FIELD, P(EFF)
HEIGHT	100 FEET	AREA		I-ONE STANDARD DEVIATION
BASE	50 FEET	CONTRACTOR	A	

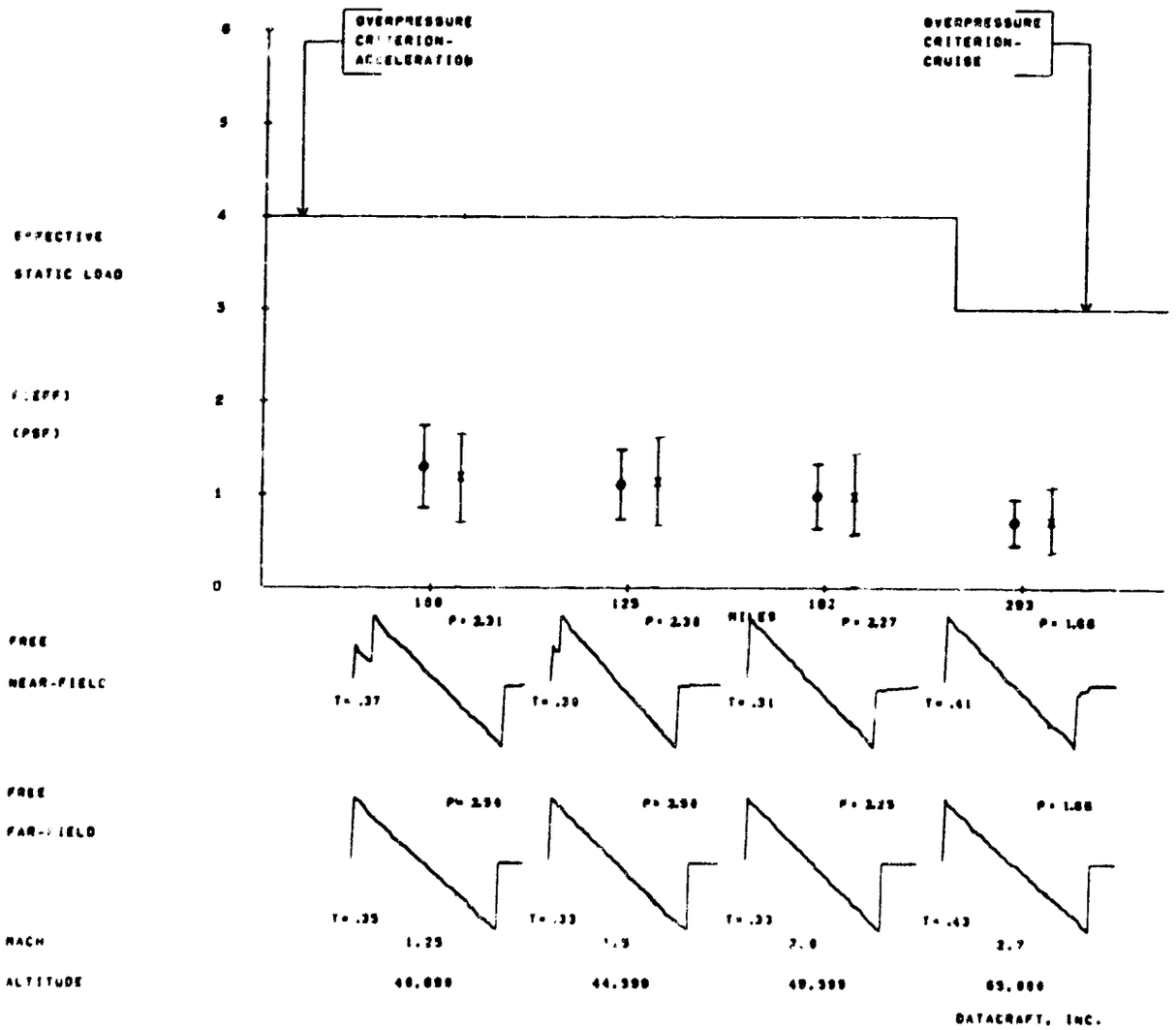


Figure 24

COMPARISON OF NEAR-FIELD WITH FAR-FIELD EFFECTIVE STATIC LOAD

TYPE	ELEMENT 3	LENGTH	50 FEET	o-MEAN NEAR FIELD, P(EFF)
DAMPING	3 PER CENT	PITCH ANGLE		x-MEAN FAR-FIELD, P(EFF)
HEIGHT	100 FEET	AREA		I-ONE STAND RD DEVIATION
BASE	50 FEET	CONTRACTOR	A	

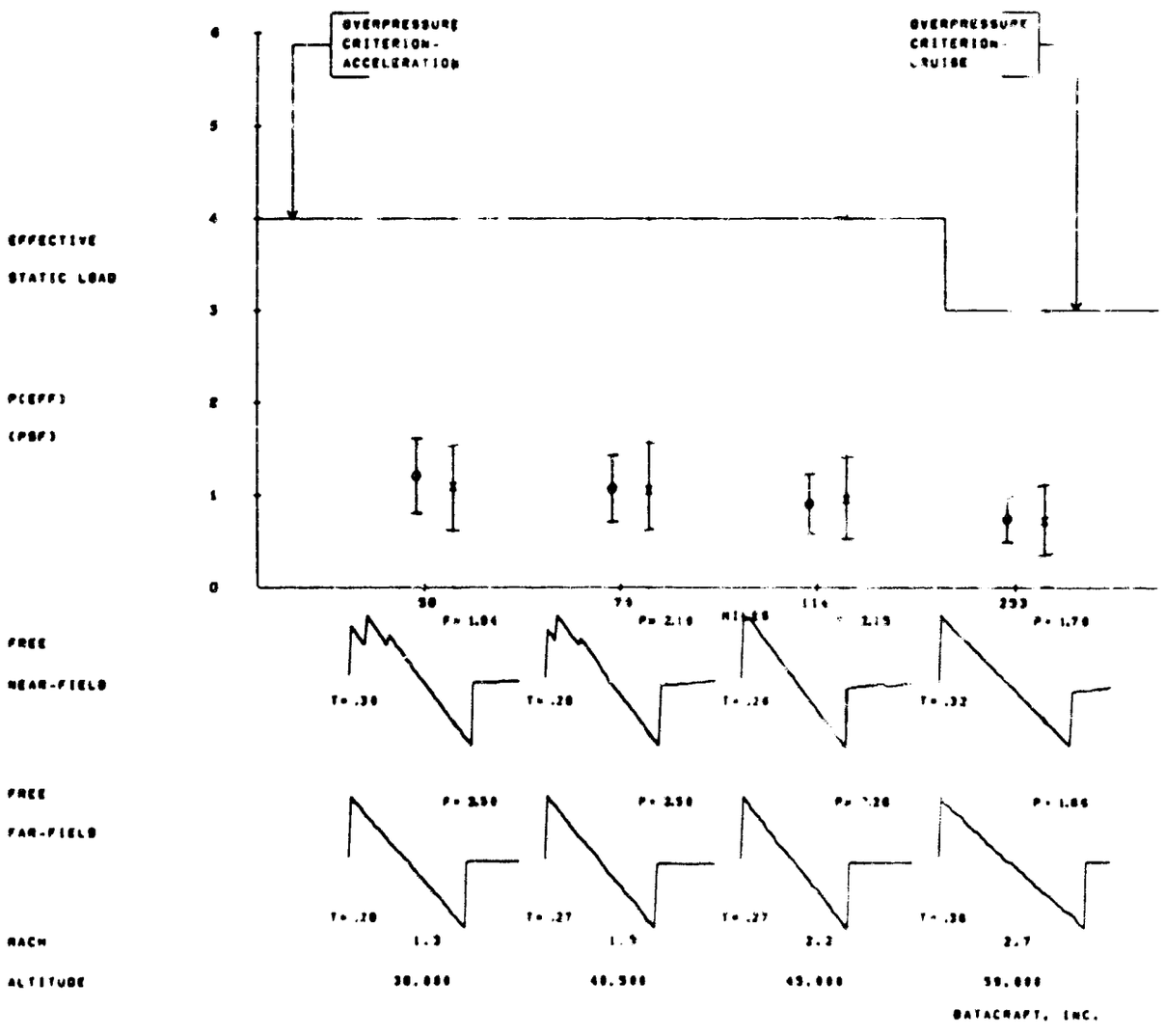


Figure 25

COMPARISON OF NEAR-FIELD WITH FAR-FIELD EFFECTIVE STATIC LOAD

TYPE	ELEMENT 8	LENGTH	100 FEET	●-MEAN NEAR-FIELD, P(EFF)
DAMPING	0 PER CENT	PITCH ANGLE		x-MEAN FAR-FIELD, P(EFF)
HEIGHT	100 FEET	AREA		‡-ONE STANDARD DEVIATION
BASE	100 FEET	CONTRACTOR	A	

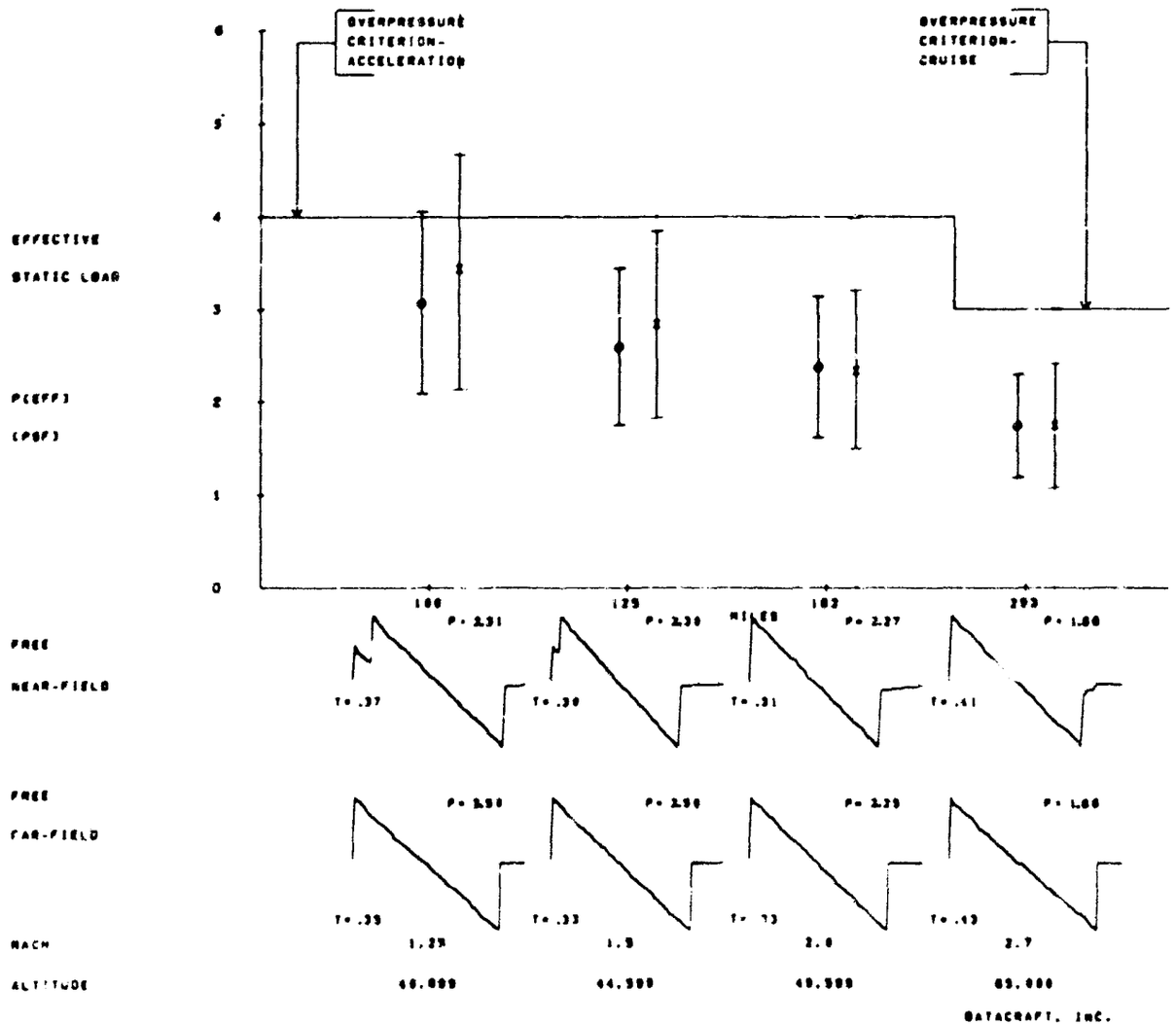


Figure 26

COMPARISON OF NEAR-FIELD WITH FAR-FIELD EFFECTIVE STATIC LOAD

TYPE	ELEMENT 8	LENGTH	100 FEET	⊕-MEAN NEAR-FIELD, P(EFF)
DAMPING	5 PER CENT	PITCH ANGLE		x-MEAN FAR-FIELD, P(EFF)
HEIGHT	100 FEET	AREA		I-ONE STANDARD DEVIATION
BASE	100 FEET	CONTRACTOR	8	

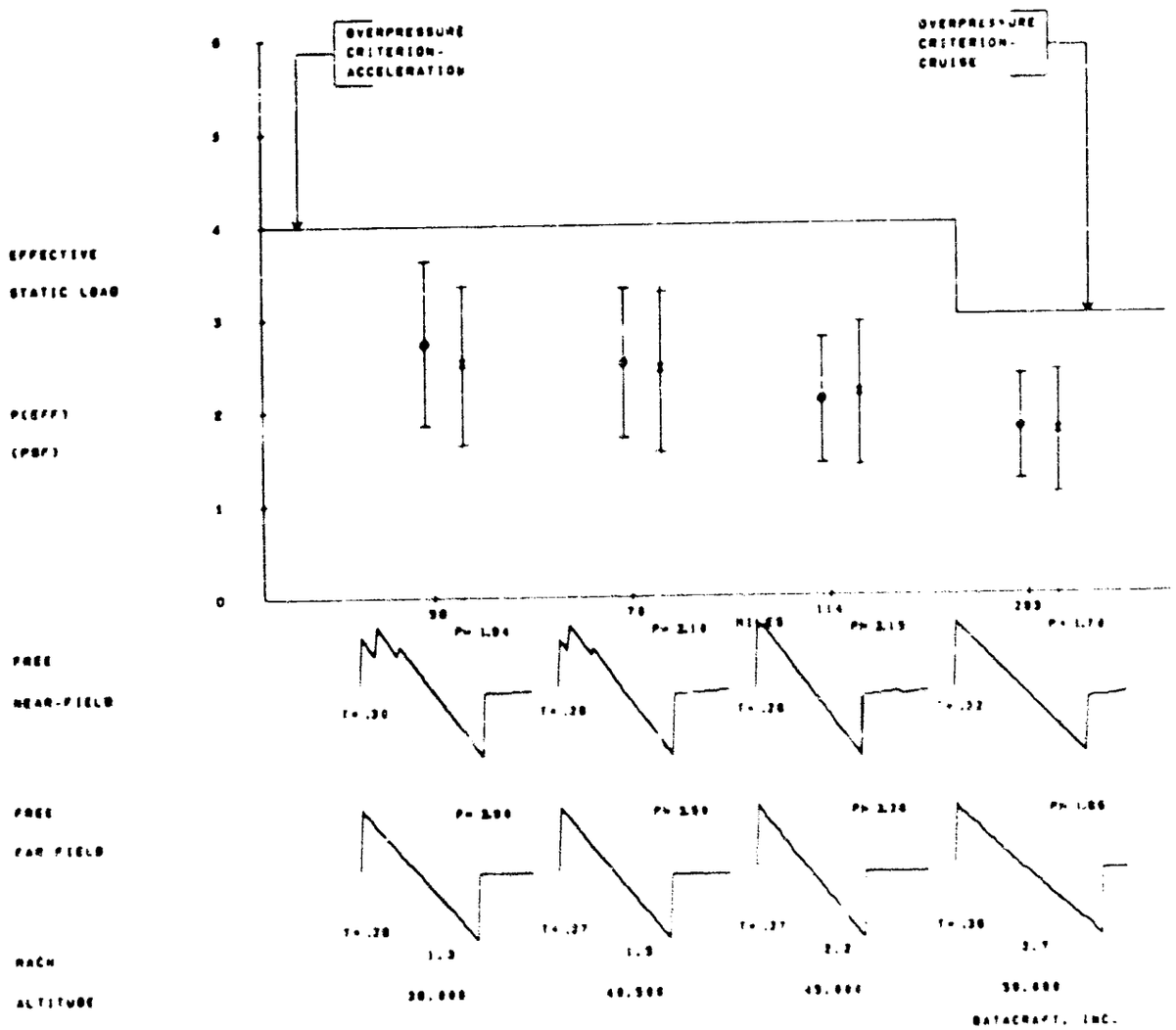


Figure 27

COMPARISON OF NEAR-FIELD WITH FAR-FIELD EFFECTIVE STATIC LOAD

TYPE ELEMENT 7 LENGTH
DAMPING 5 PER CENT PITCH ANGLE
HEIGHT 0 FEET AREA
BASE 27.50 FEET CONTRACTOR A

●-MEAN NEAR-FIELD, P(EFF)
x-MEAN FAR-FIELD, P(EFF)
I-ONE STANDARD DEVIATION

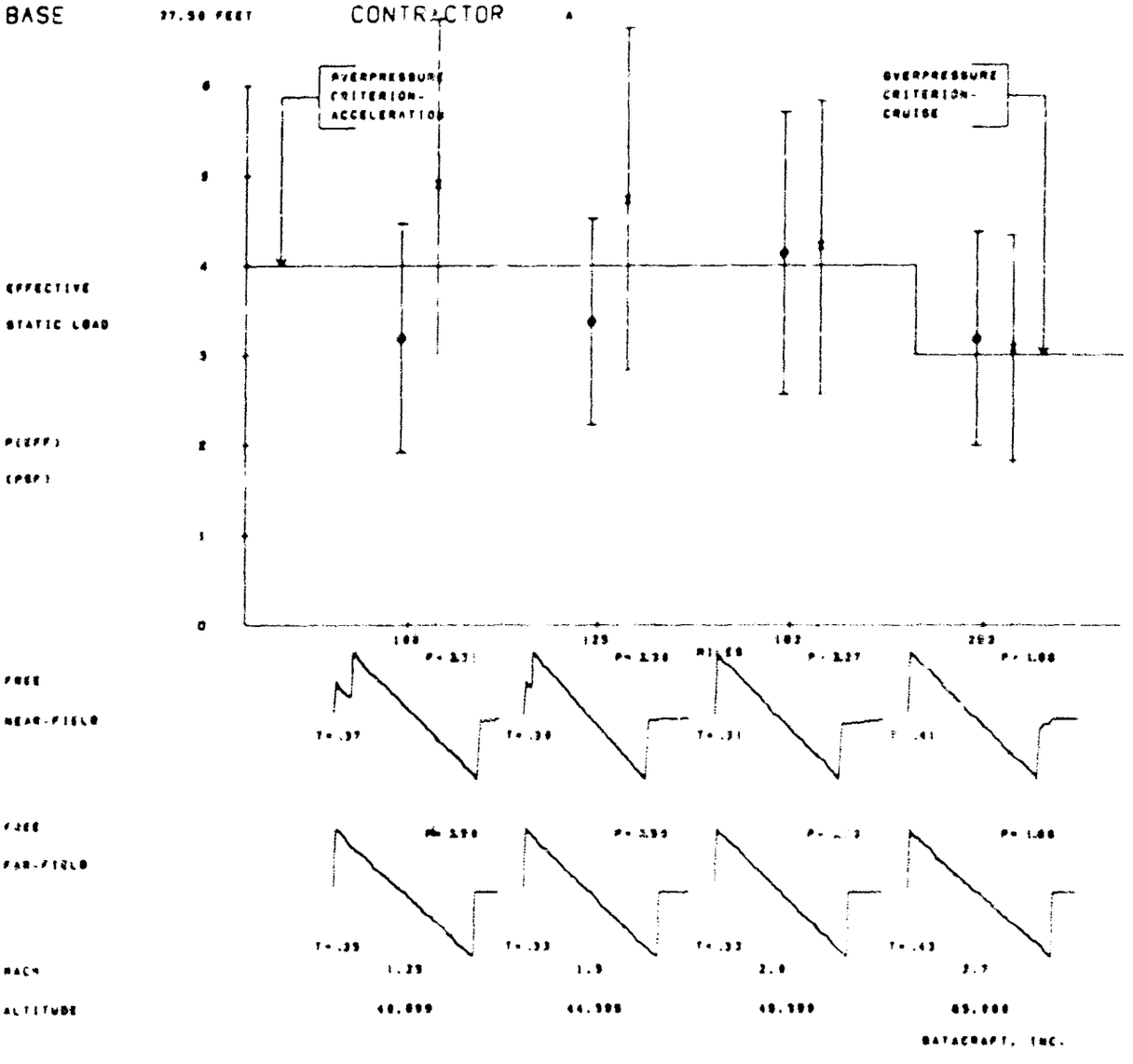


Figure 28

COMPARISON OF NEAR-FIELD WITH FAR-FIELD EFFECTIVE STATIC LOAD

TYPE ELEMENT 7 — LENGTH — ●-MEAN NEAR-FIELD, P(EFF)
DAMPING 5 PER CENT — PITCH ANGLE — x-MEAN FAR-FIELD, P(EFF)
HEIGHT 0 FEET — AREA — I-ONE STANDARD DEVIATION
BASE 37.50 FEET — CONTRACTOR 0

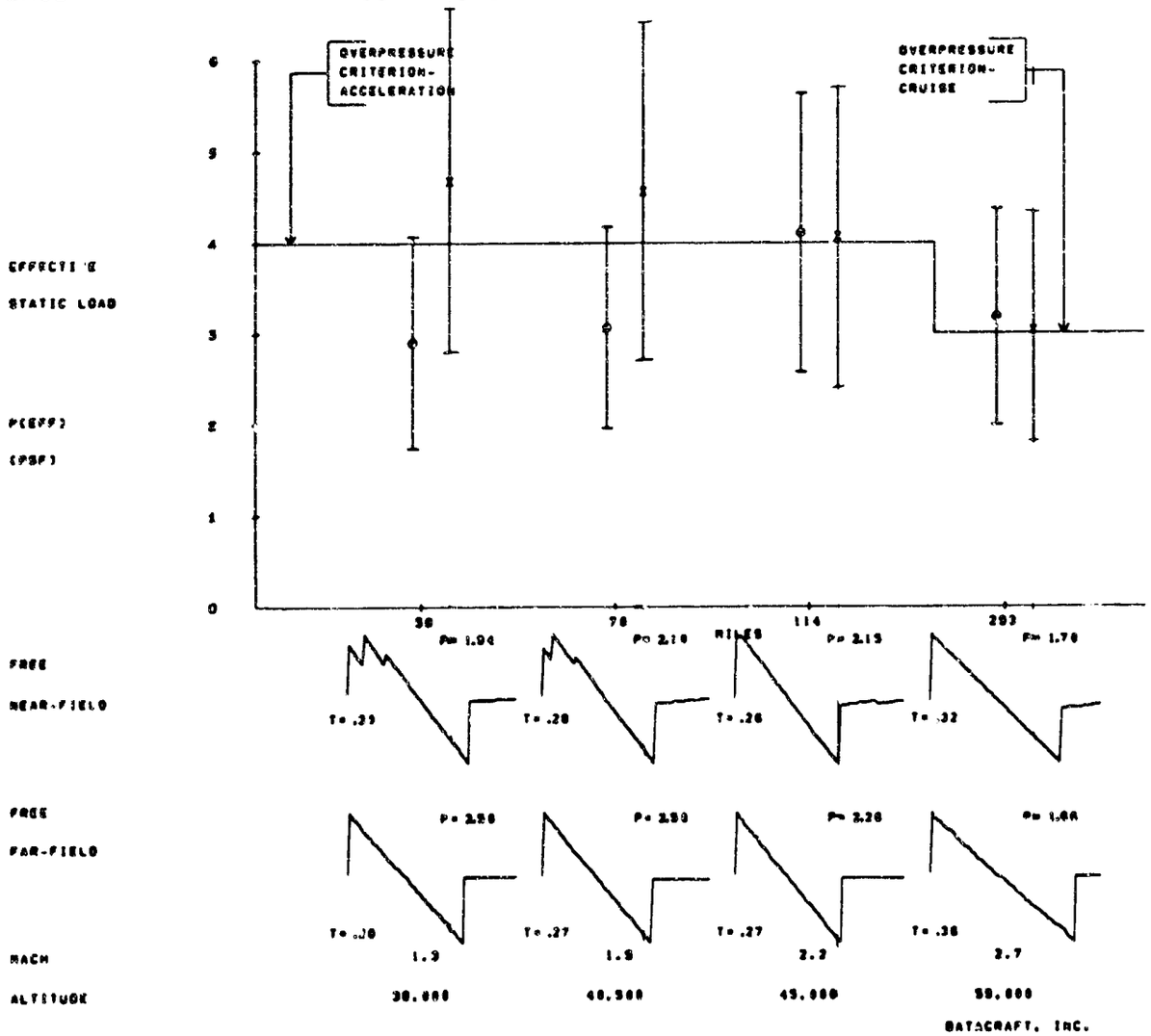


Figure 29

COMPARISON OF NEAR-FIELD WITH FAR-FIELD EFFECTIVE STATIC LOAD

TYPE	ELEMENT 8	LENGTH	
DAMPING	3 PER CENT	PITCH ANGLE	
HEIGHT	10.50 FEET	AREA	
BASE	21 FEET	CONTRACTOR	A

●-MEAN NEAR-FIELD, P(EFF)
x-MEAN FAR-FIELD, P(EFF)
I-ONE STANDARD DEVIATION

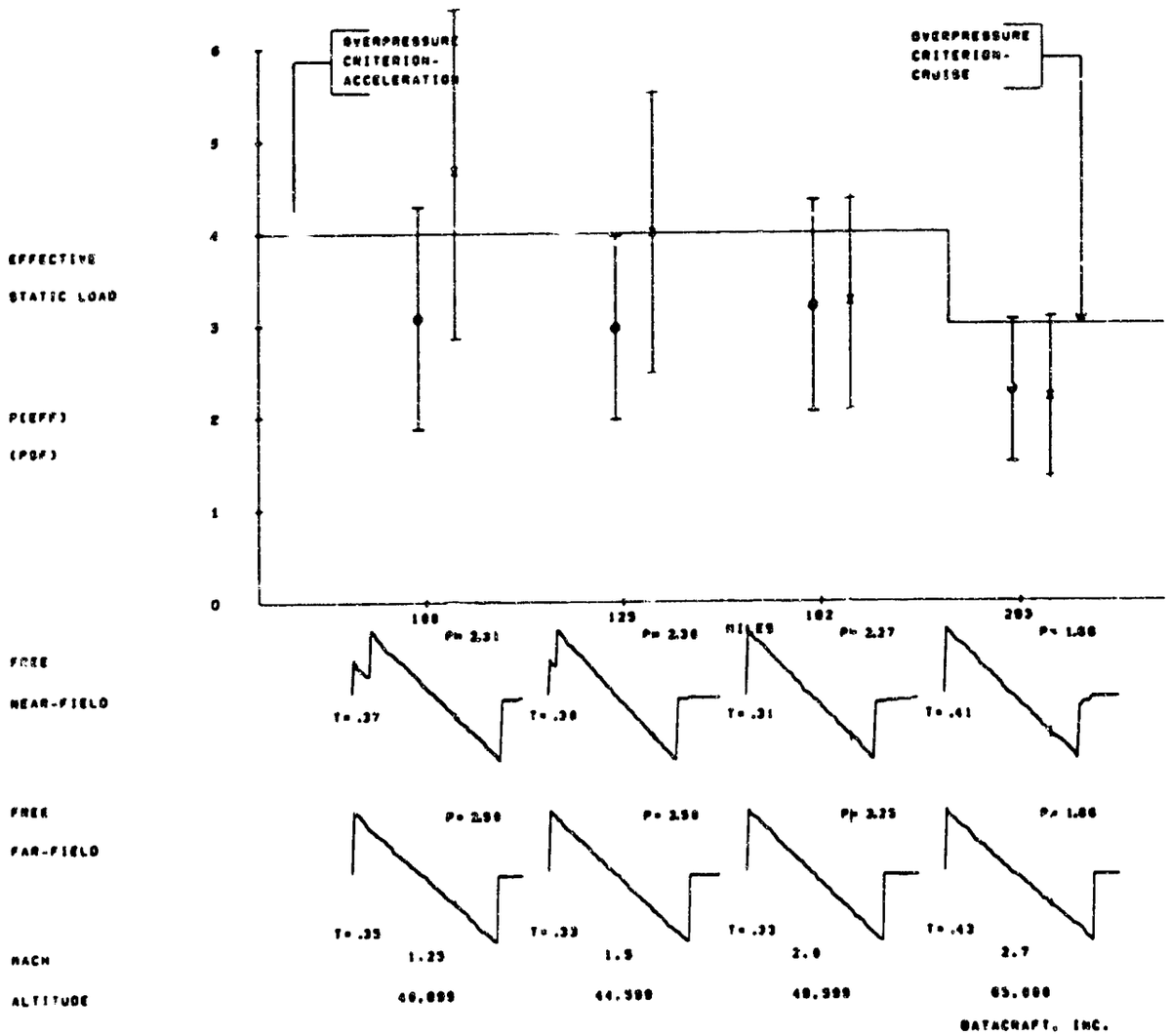


Figure 30

COMPARISON OF NEAR-FIELD WITH FAR-FIELD EFFECTIVE STATIC LOAD

TYPE	ELEMENT 8	LENGTH	o-MEAN NEAR-FIELD, P(EFF)
DAMPING	5 PER CENT	PITCH ANGLE	x-MEAN FAR-FIELD, P(E.F)
HEIGHT	18.58 FEET	AREA	I-ONE STANDARD DEVIATION
BASE	31 FEET	CONTRACTOR 8	

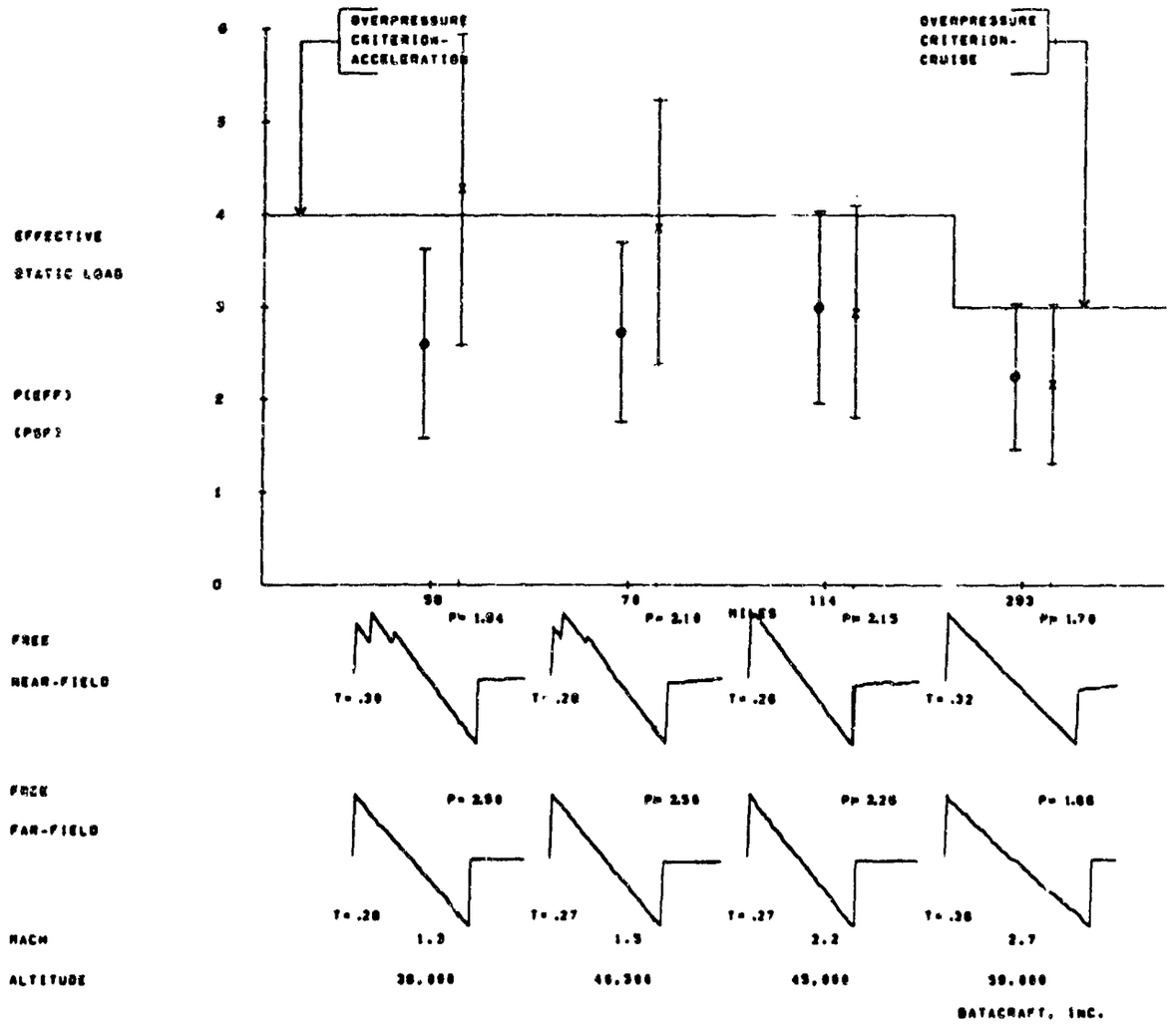


Figure 31

COMPARISON OF NEAR-FIELD WITH FAR-FIELD EFFECTIVE STATIC LOAD

TYPE	ELEMENT 8	LENGTH	20.83 FEET	o-MEAN NEAR-FIELD, P(EFF)
DAMPING	3 PER CENT	PITCH ANGLE	10.4 DEGRE	x-MEAN FAR-FIELD, P(EFF)
HEIGHT	8 FEET	AREA		I-ONE STANDARD DEVIATION
BASE	40.83 FEET	CONTRACTOR	A	

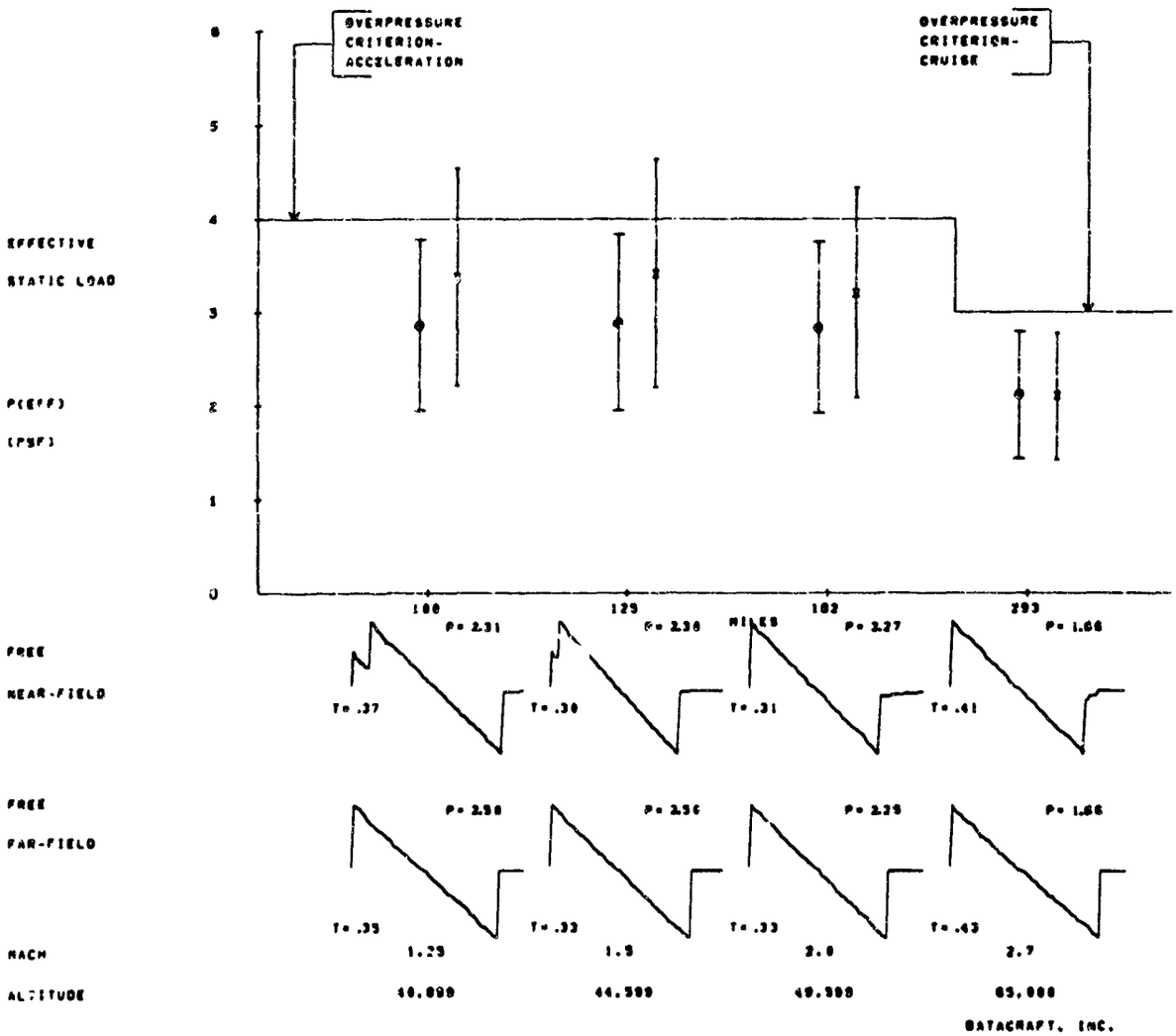


Figure 32

COMPARISON OF NEAR-FIELD WITH FAR-FIELD EFFECTIVE STATIC LOAD

TYPE	ELEMENT 9	LENGTH	28.65 FEET	o-MEAN NEAR-FIELD, P(EFF)
DAMPING	5 PER CENT	PITCH ANGLE	10.4 DEGREE	x-MEAN FAR-FIELD, P(EFF)
HEIGHT	9 FEET	AREA		I-ONE STANDARD DEVIATION
BASE	48.65 FEET	CONTRACTOR	B	

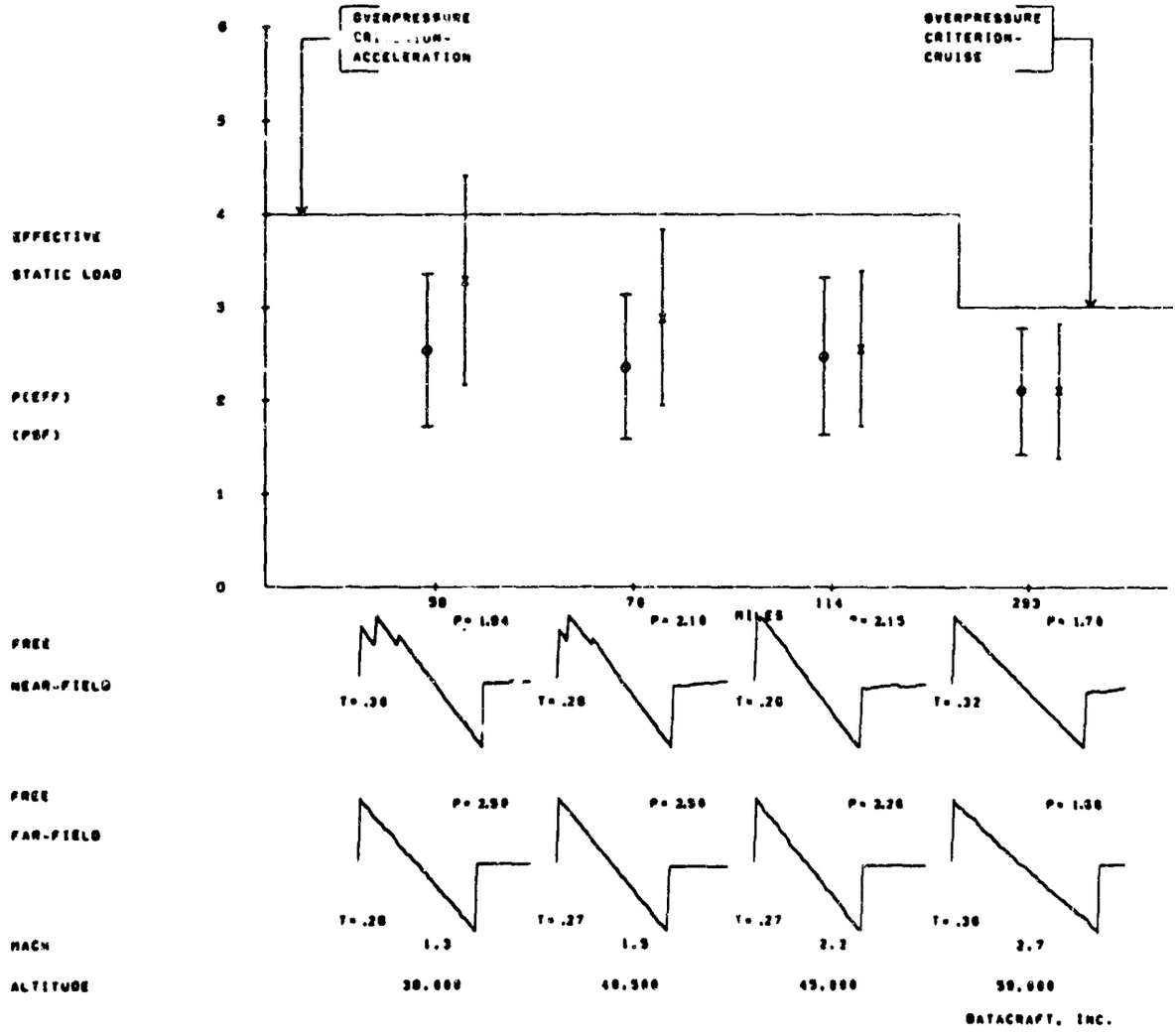


Figure 33

COMPARISON OF NEAR-FIELD WITH FAR-FIELD EFFECTIVE STATIC LOAD

TYPE	ELEMENT 16	LENGTH	120 FEET	⊕-MEAN NEAR-FIELD, P(EFF
DAMPING	5 PER CENT	PITCH ANGLE		x-MEAN FAR-FIELD, P(EFF)
HEIGHT	20 FEET	AREA		‡-ONE STANDARD DEVIATION
BASE	75 FEET	CONTRACTOR	A	

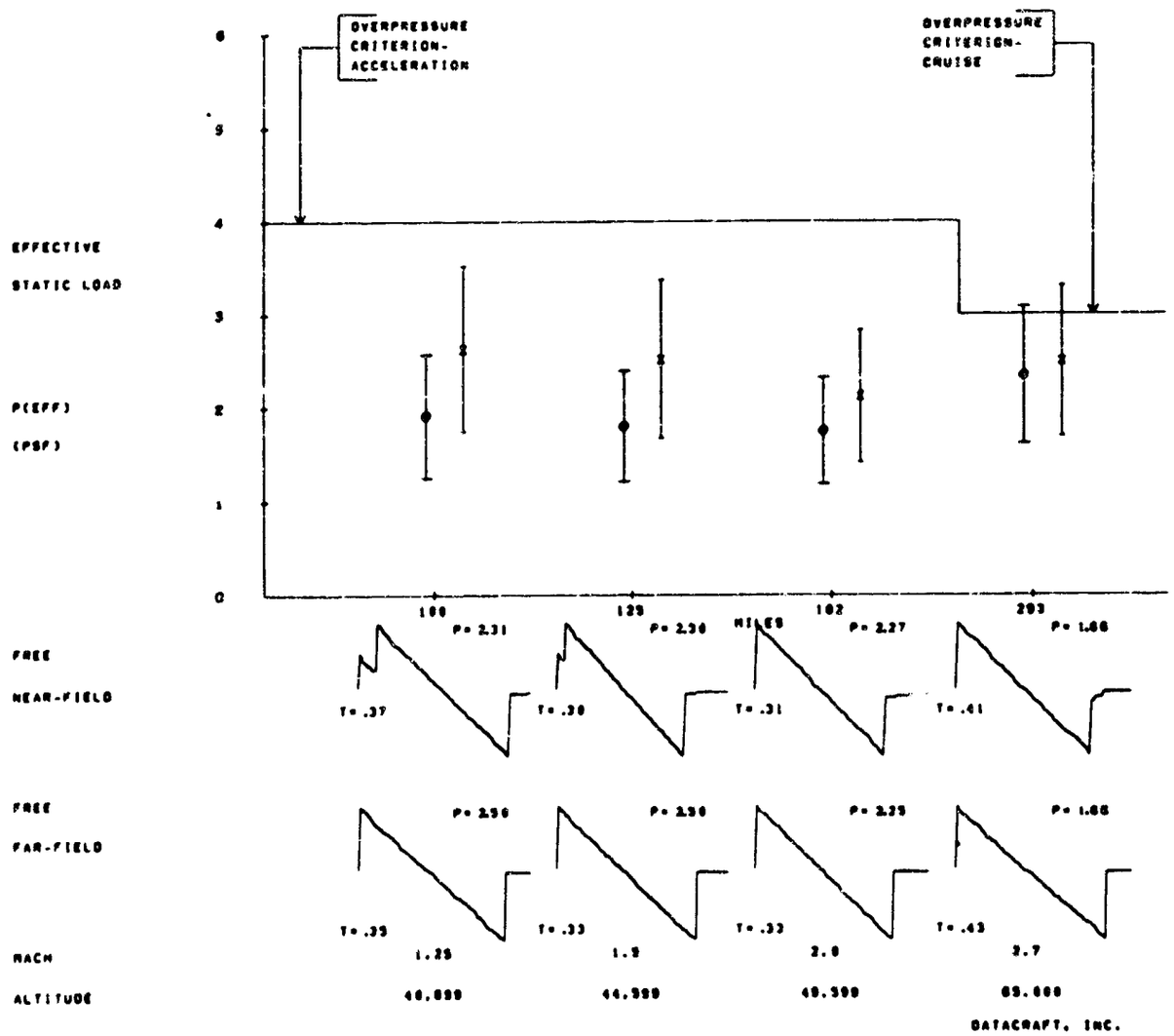


Figure 34

COMPARISON OF NEAR-FIELD WITH FAR-FIELD EFFECTIVE STATIC LOAD

TYPE	ELEMENT 18	LENGTH	120 FEET	o-MEAN NEAR-FIELD, P(EFF)
DAMPING	9 PER CENT	PITCH ANGLE	0 DEGREES	x-MEAN FAR-FIELD, P(EFF)
HEIGHT	20 FEET	AREA		I-ONE STANDARD DEVIATION
BASE	75 FEET	CONTRACTOR	B	

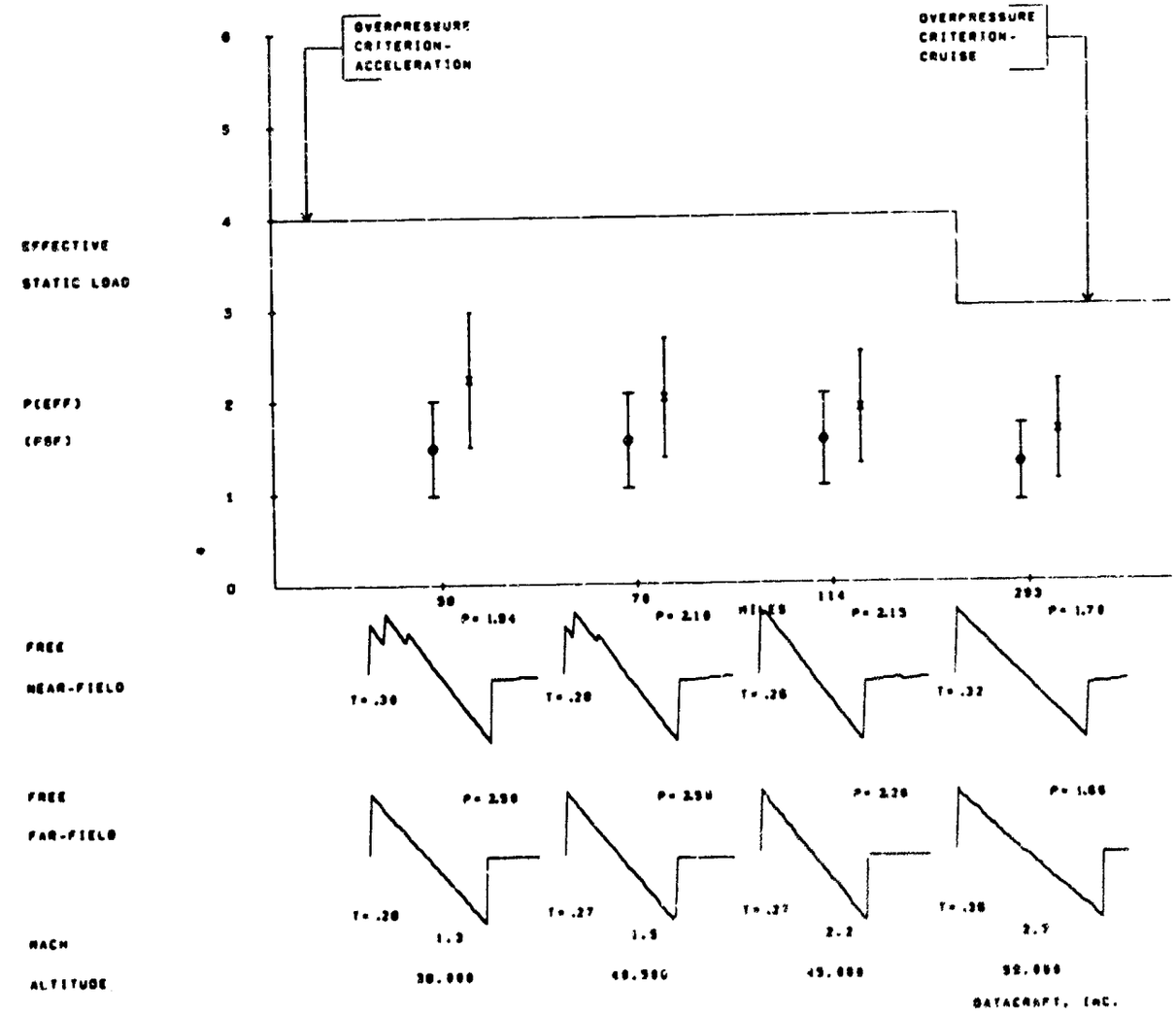


Figure 35

COMPARISON OF NEAR-FIELD WITH FAR-FIELD EFFECTIVE STATIC LOAD

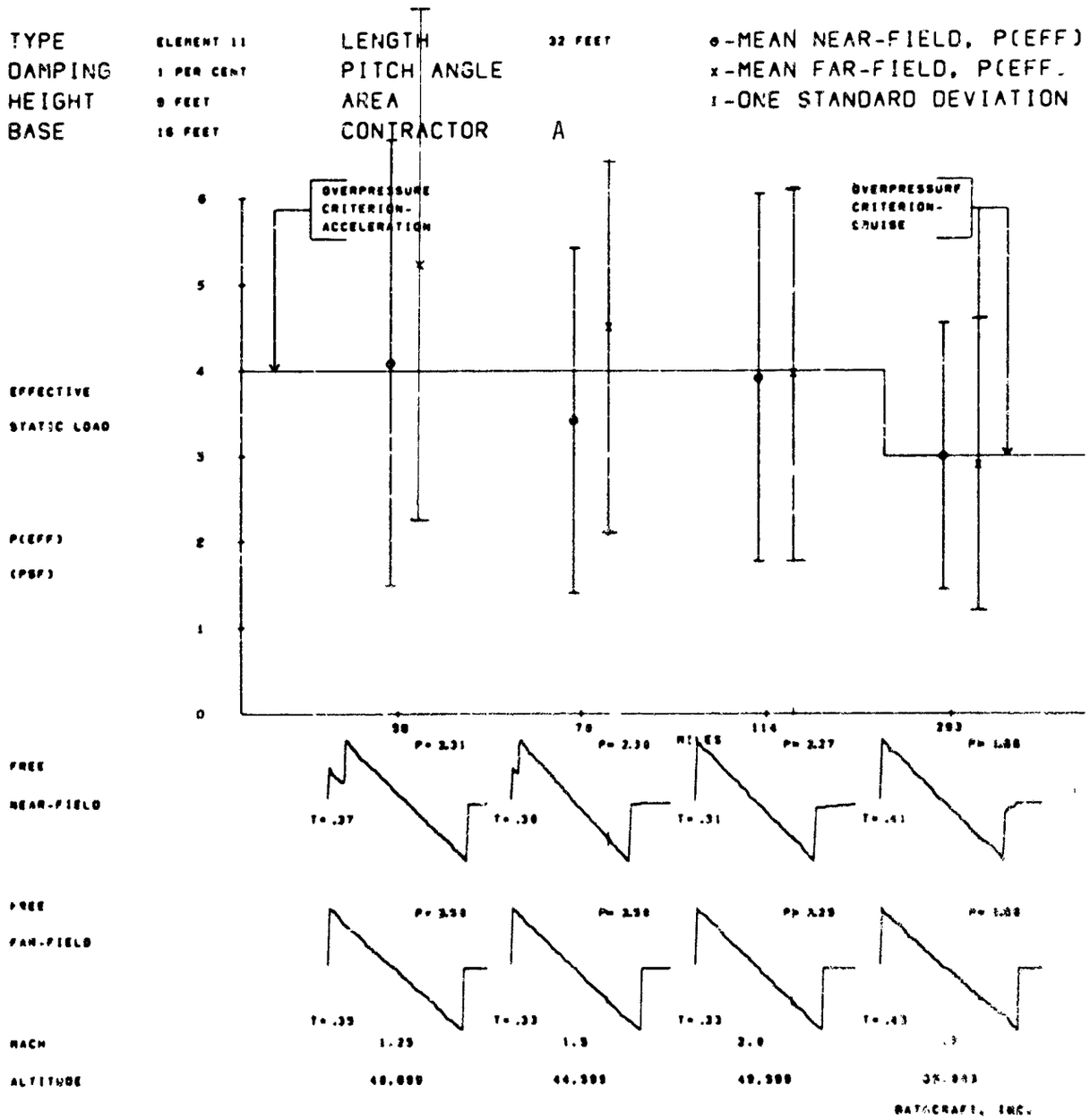


Figure 36

COMPARISON OF NEAR-FIELD WITH FAR-FIELD EFFECTIVE STATIC LOAD

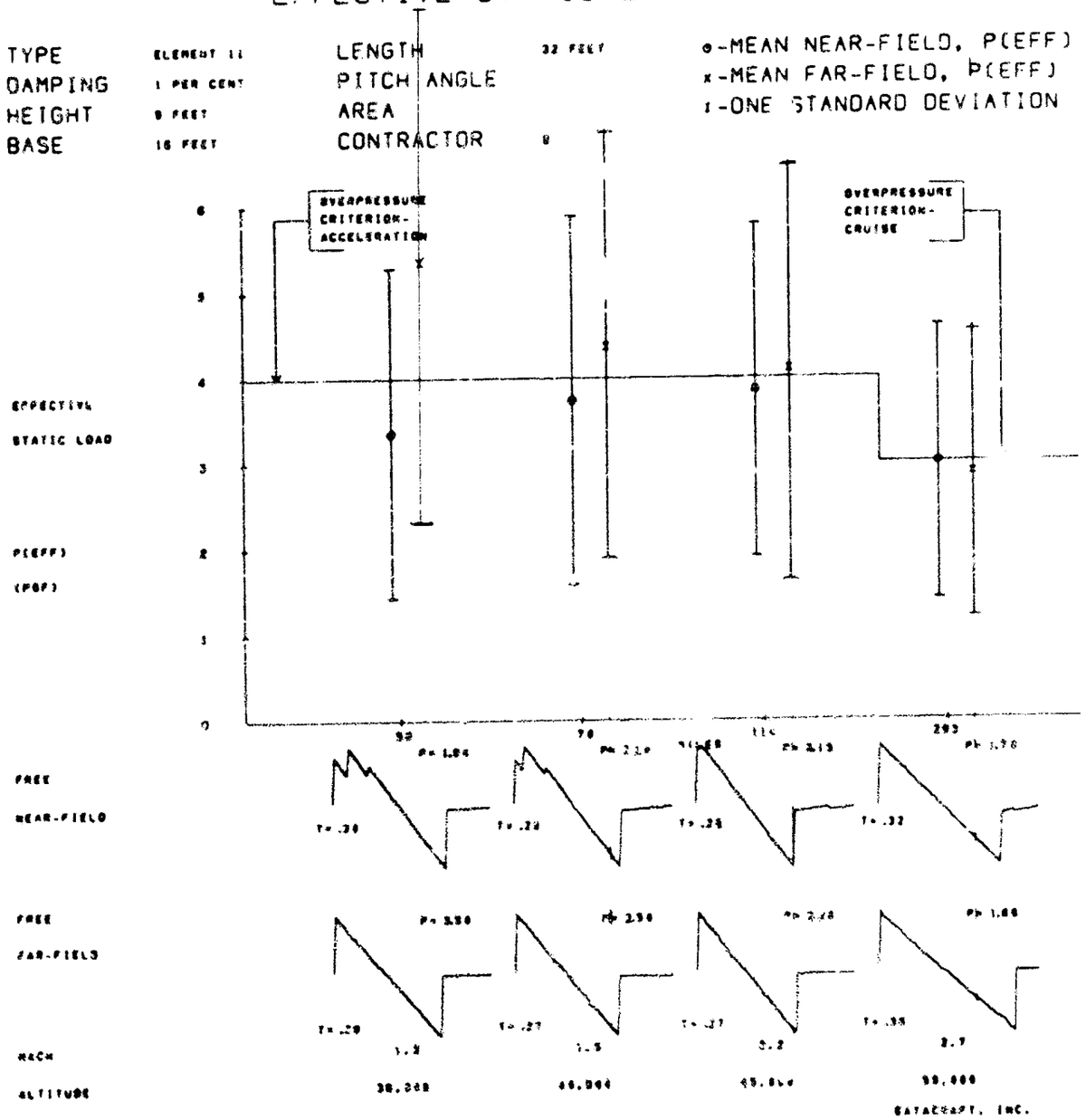


Figure 37

COMPARISON OF NEAR-FIELD WITH FAR-FIELD EFFECTIVE STATIC LOAD

TYPE ELEMENT 12 LENGTH 32 FEET
DAMPING 1 PER CENT PITCH ANGLE
HEIGHT 8 FEET AREA
BASE 16 FEET CONTRACTOR A

o-MEAN NEAR-FIELD, P(EFF)
x-MEAN FAR-FIELD, P(EFF)
I-ONE STANDARD DEVIATION

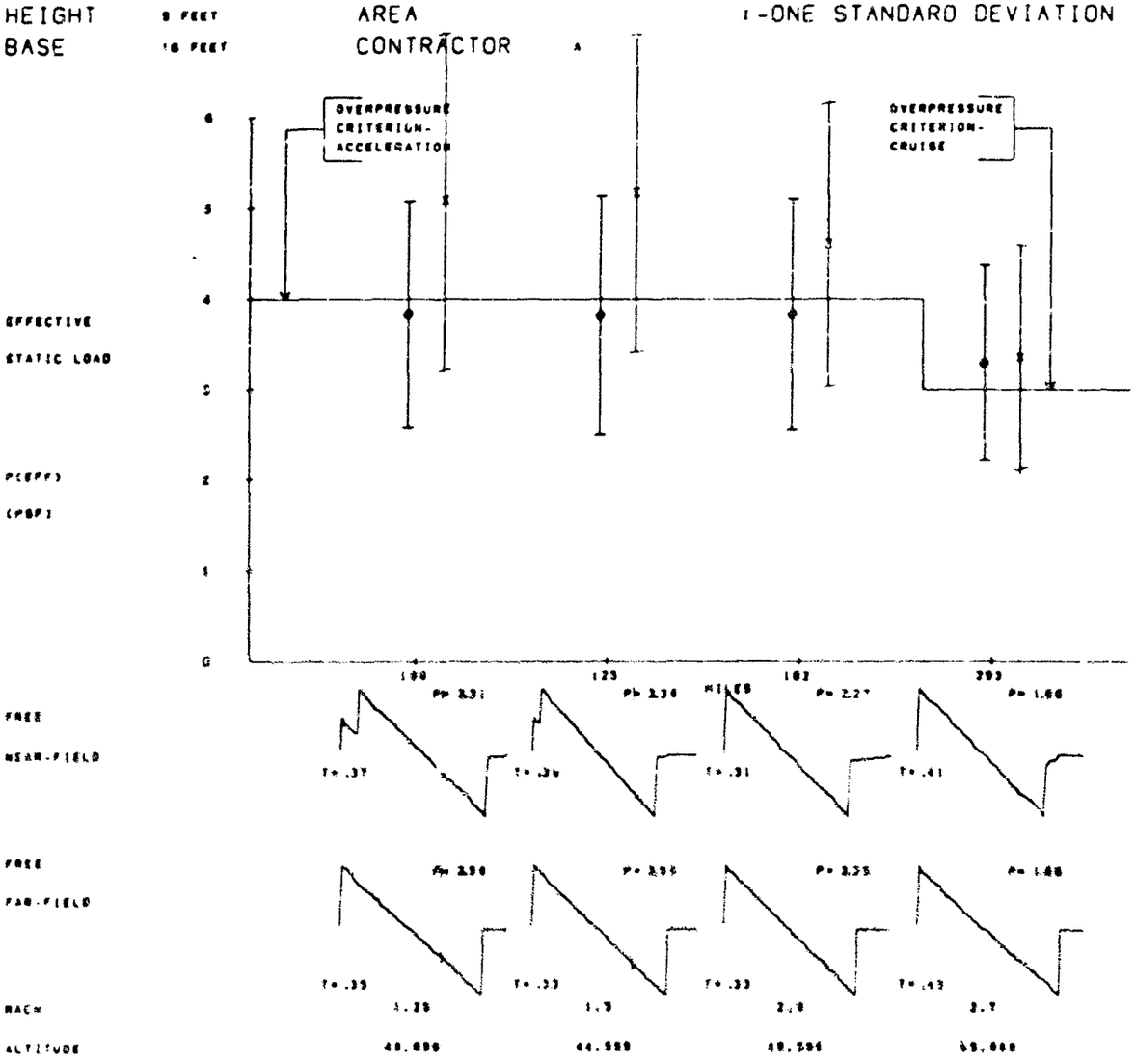


Figure 38

COMPARISON OF NEAR-FIELD WITH FAR-FIELD EFFECTIVE STATIC LOAD

TYPE ELEMENT 12
DAMPING 1 PER CENT
HEIGHT 8 FEET
BASE 16 FEET

LENGTH 32 FEET
PITCH ANGLE
AREA
CONTRACTOR P

o-MEAN NEAR-FIELD, P(EFF)
x-MEAN FAR-FIELD, P(EFF)
I-ONE STANDARD DEVIATION

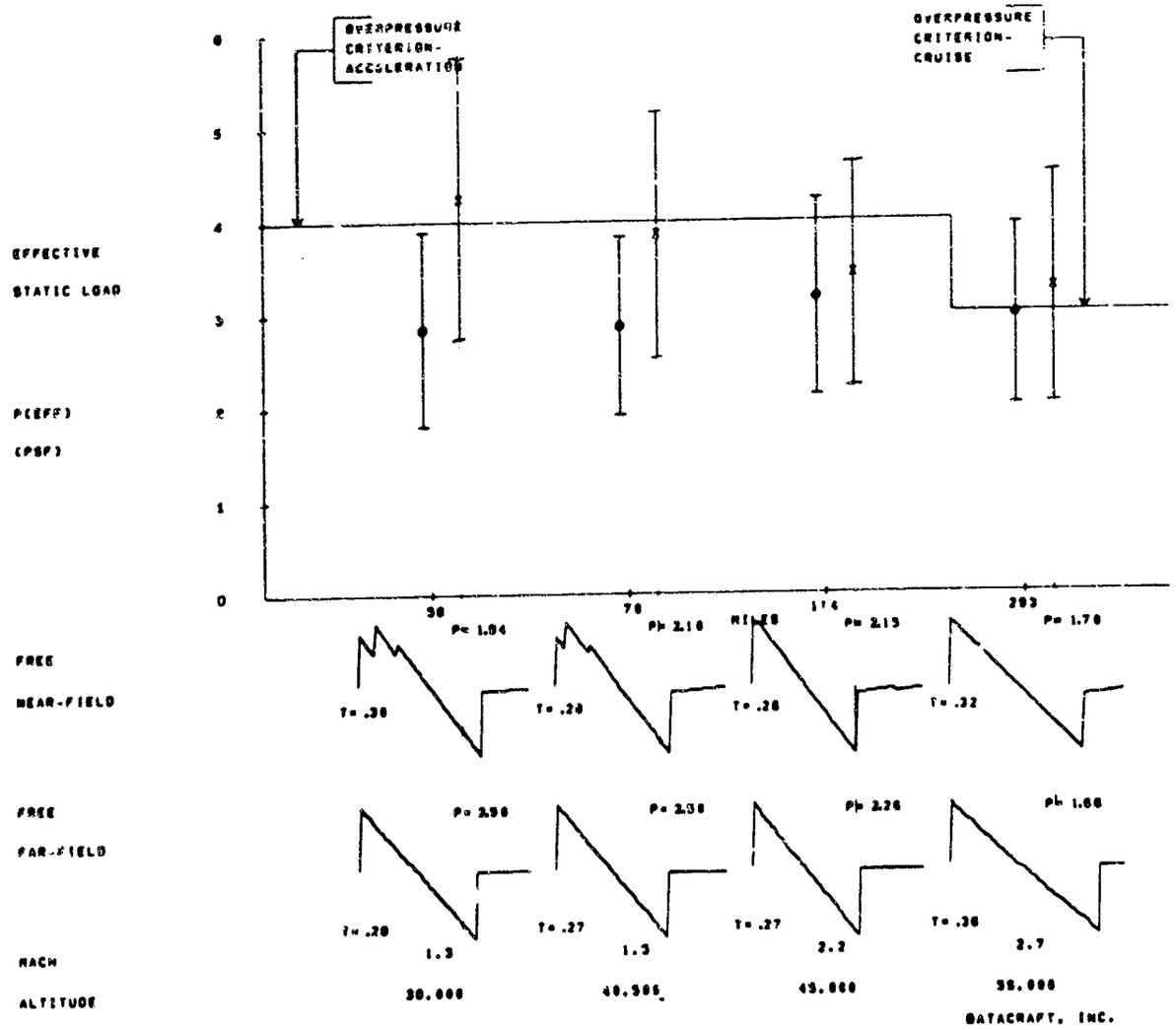


Figure 39

COMPARISON OF NEAR-FIELD WITH FAR-FIELD EFFECTIVE STATIC LOAD

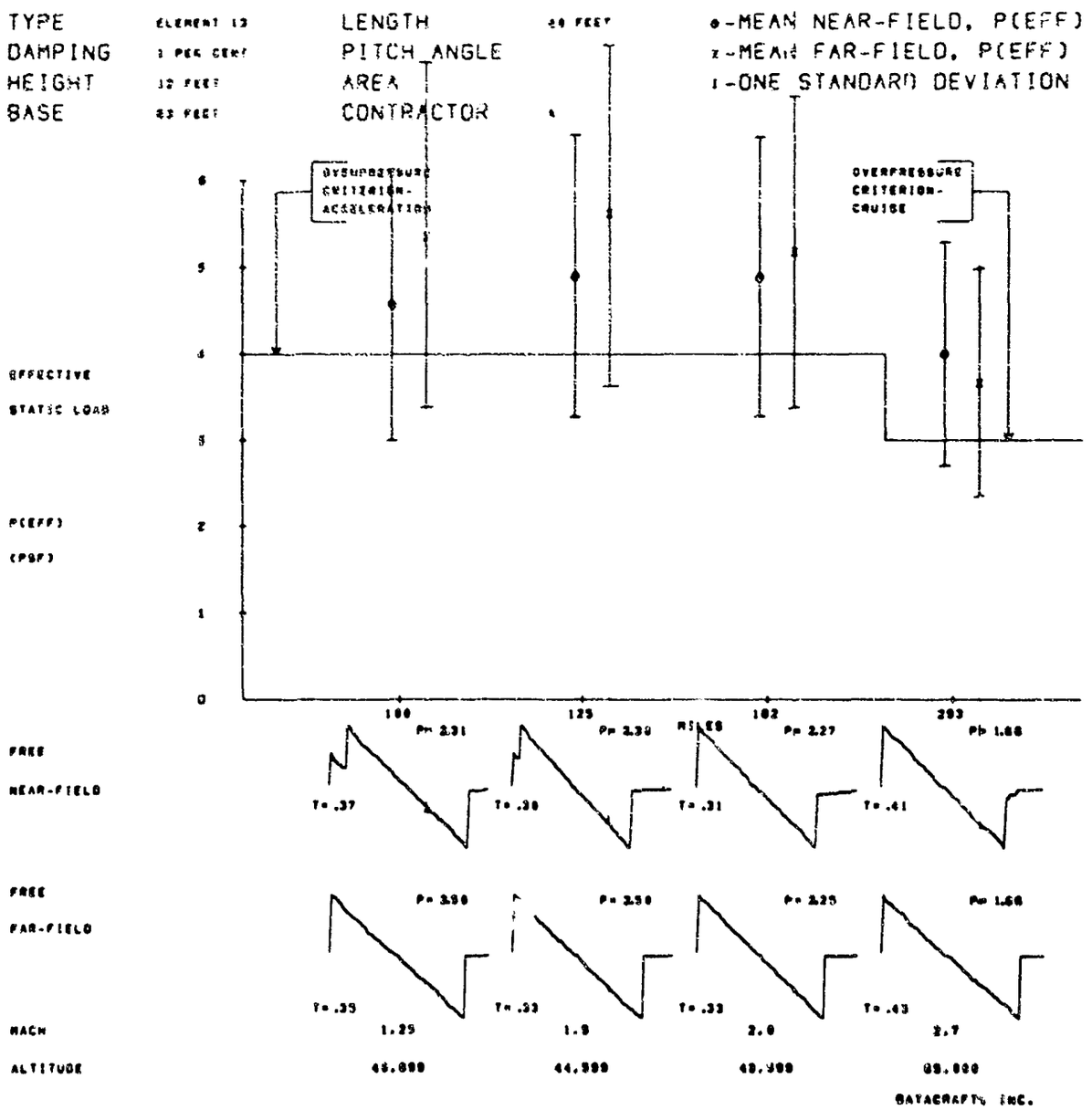


Figure 40

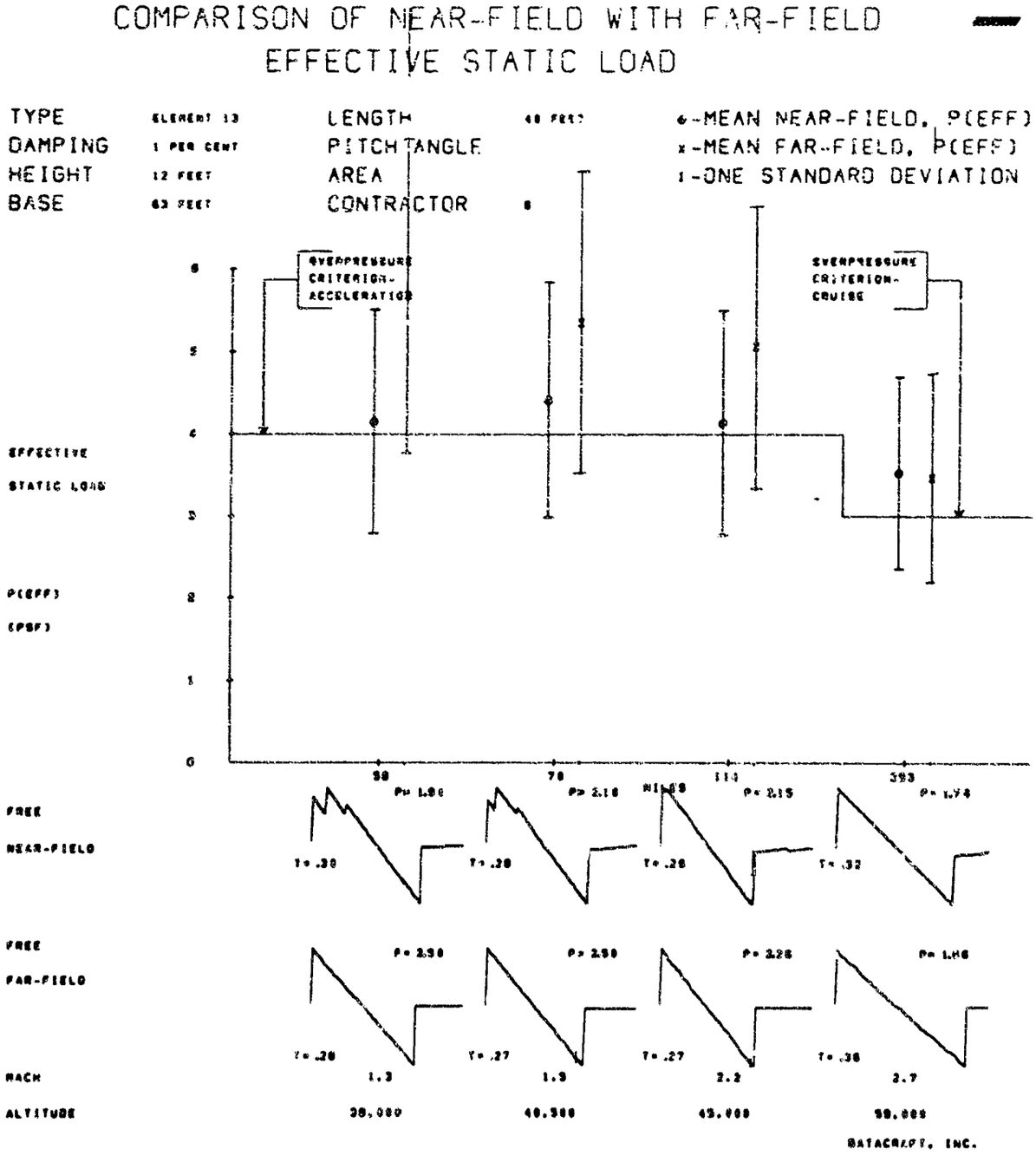

COMPARISON OF NEAR-FIELD WITH FAR-FIELD
EFFECTIVE STATIC LOAD
TYPE
DAMPING
HEIGHT
BASE
LENGTH
PITCH ANGLE
AREA
CONTRACTOR
o-MEAN NEAR-FIELD, P(EFF)
x-MEAN FAR-FIELD, P(EFF)
I-ONE STANDARD DEVIATION
OVERPRESSURE CRITERION-ACCELERATION
OVERPRESSURE CRITERION-CRUISE
EFFECTIVE STATIC LOAD
P(EFF) (PSF)
FREE NEAR-FIELD
FREE FAR-FIELD
MACH
ALTITUDE
BATACRAFT, INC.

Figure 41

COMPARISON OF NEAR-FIELD WITH FAR-FIELD EFFECTIVE STATIC LOAD

TYPE	ELEMENT 24	LENGTH	22 FEET	●-MEAN NEAR-FIELD, P(EFF)
DAMPING	1 PER CENT	PITCH ANGLE		x-MEAN FAR-FIELD, P(EFF)
HEIGHT	18.38 FEET	AREA		I-ONE STANDARD DEVIATION
BASE	18 FEET	CONTRACTOR	A	

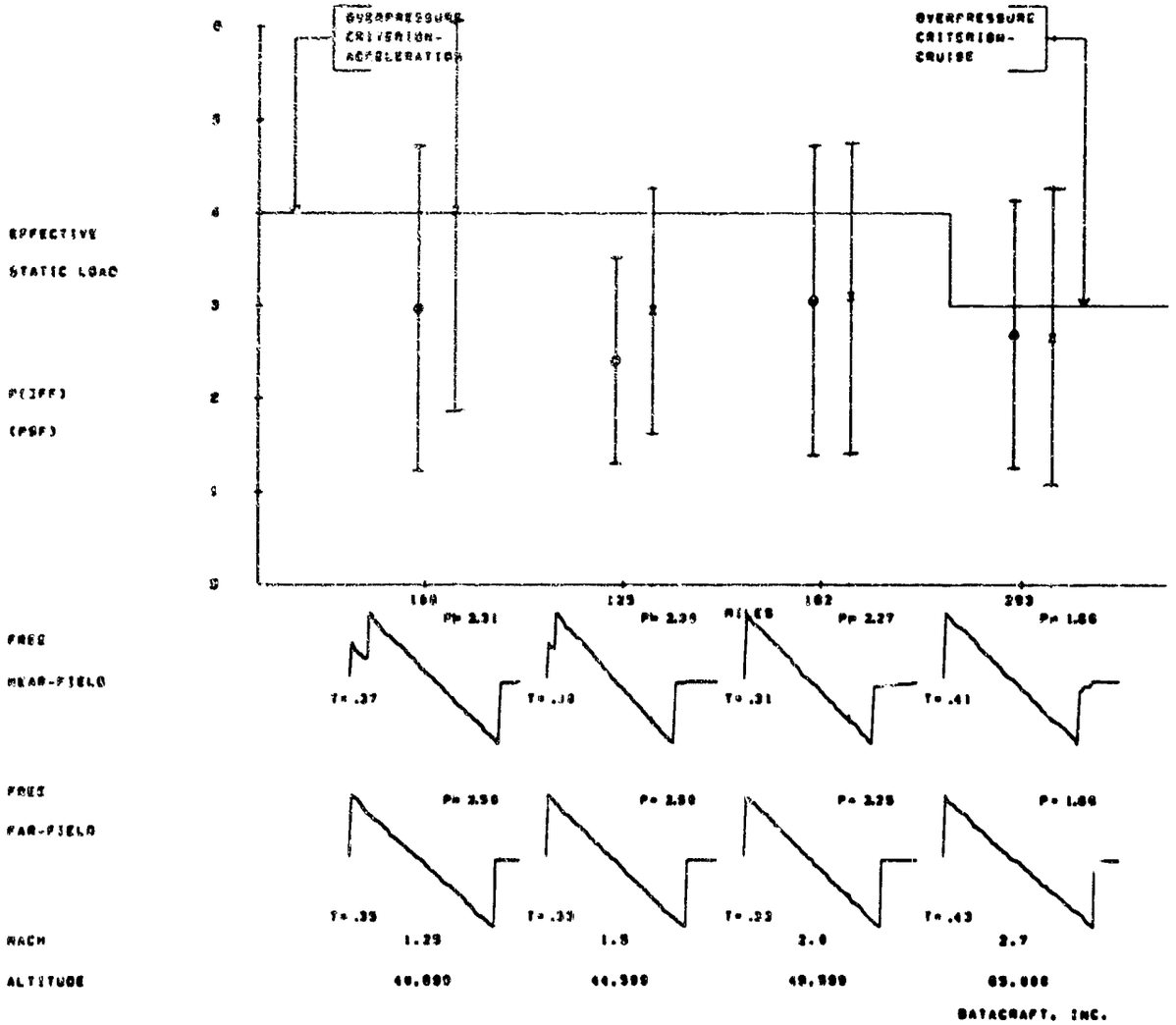


Figure 42

COMPARISON OF NEAR-FIELD WITH FAR-FIELD EFFECTIVE STATIC LOAD

TYPE	ELEMENT 14	LENGTH	32 FEET	o-MEAN NEAR-FIELD, P(EFF)
DAMPING	1 PER CENT	PITCH ANGLE		x-MEAN FAR-FIELD, P(EFF)
HEIGHT	10.50 FEET	AREA		1-ONE STANDARD DEVIATION
BASE	16 FEET	CONTRACTOR	B	

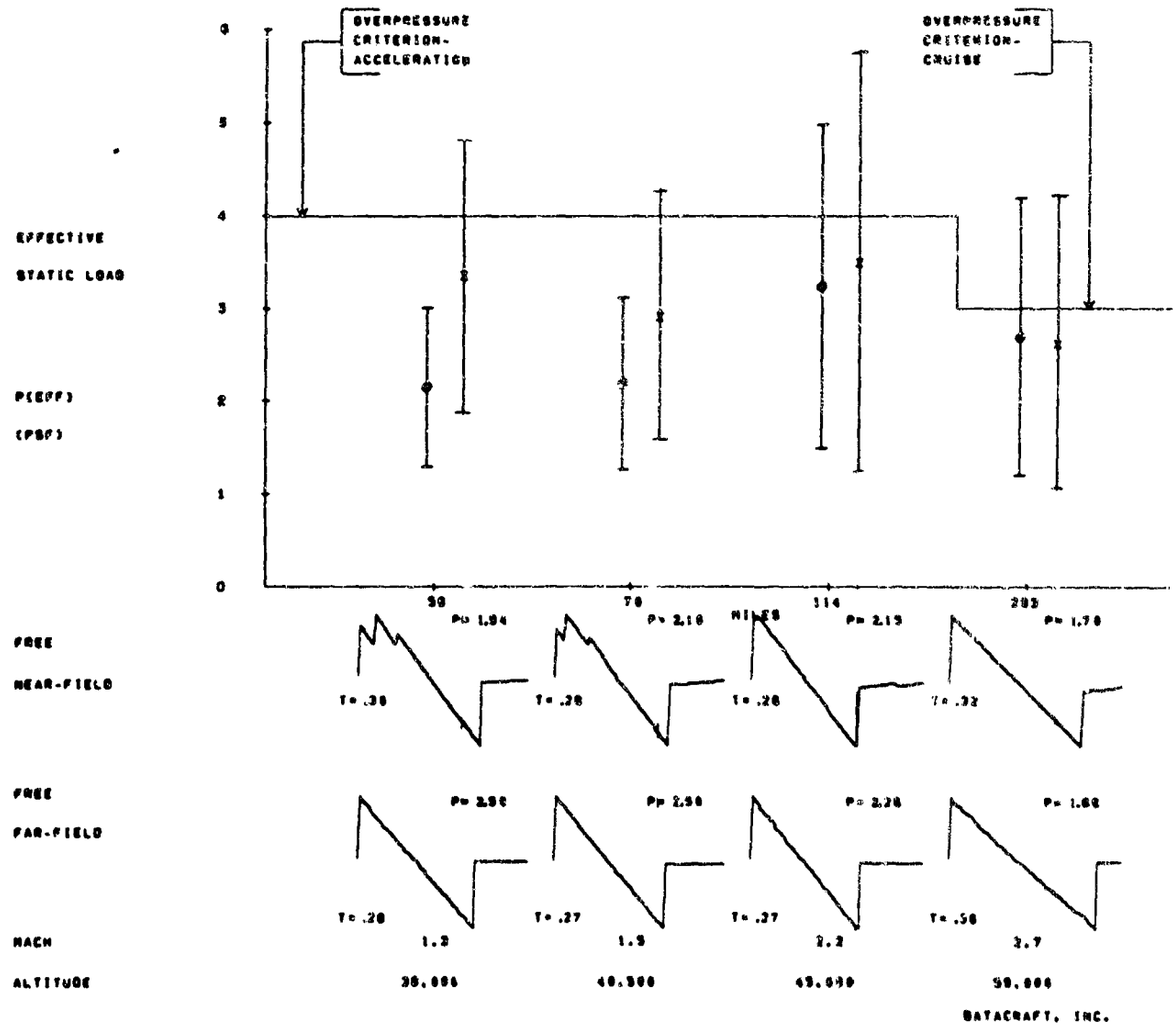


Figure 43

COMPARISON OF NEAR-FIELD WITH FAR-FIELD EFFECTIVE STATIC LOAD

TYPE — ELEMENT 15 — LENGTH — 32 FEET — o-MEAN NEAR-FIELD, P(EFF)
DAMPING — 1 PER CENT — PITCH ANGLE — x-MEAN FAR-FIELD, P(EFF)
HEIGHT — 16.96 FEET — AREA — I-ONE STANDARD DEVIATION
BASE — 15 FEET — CONTRACTOR — A

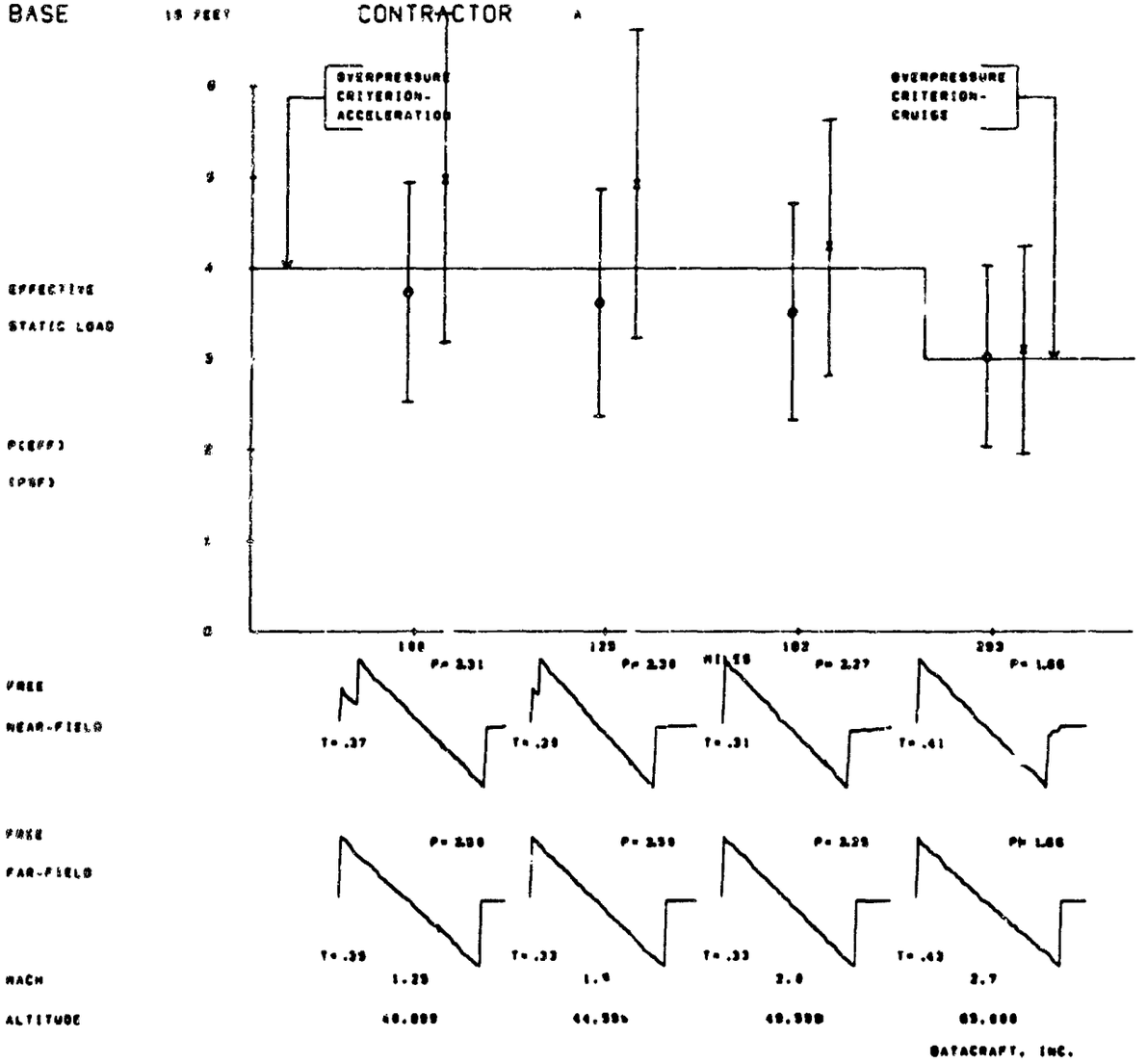


Figure 44

COMPARISON OF NEAR-FIELD WITH FAR-FIELD EFFECTIVE STATIC LOAD

TYPE	ELEMENT 13	LENGTH	32 FEET	o-MEAN NEAR-FIELD, P(EFF)
DAMPING	1 PER CENT	PITCH ANGLE		x-MEAN FAR-FIELD, P(EFF)
HEIGHT	18.50 FEET	AREA		I-ONE STANDARD DEVIATION
BASE	16 FEET	CONTRACTOR	B	

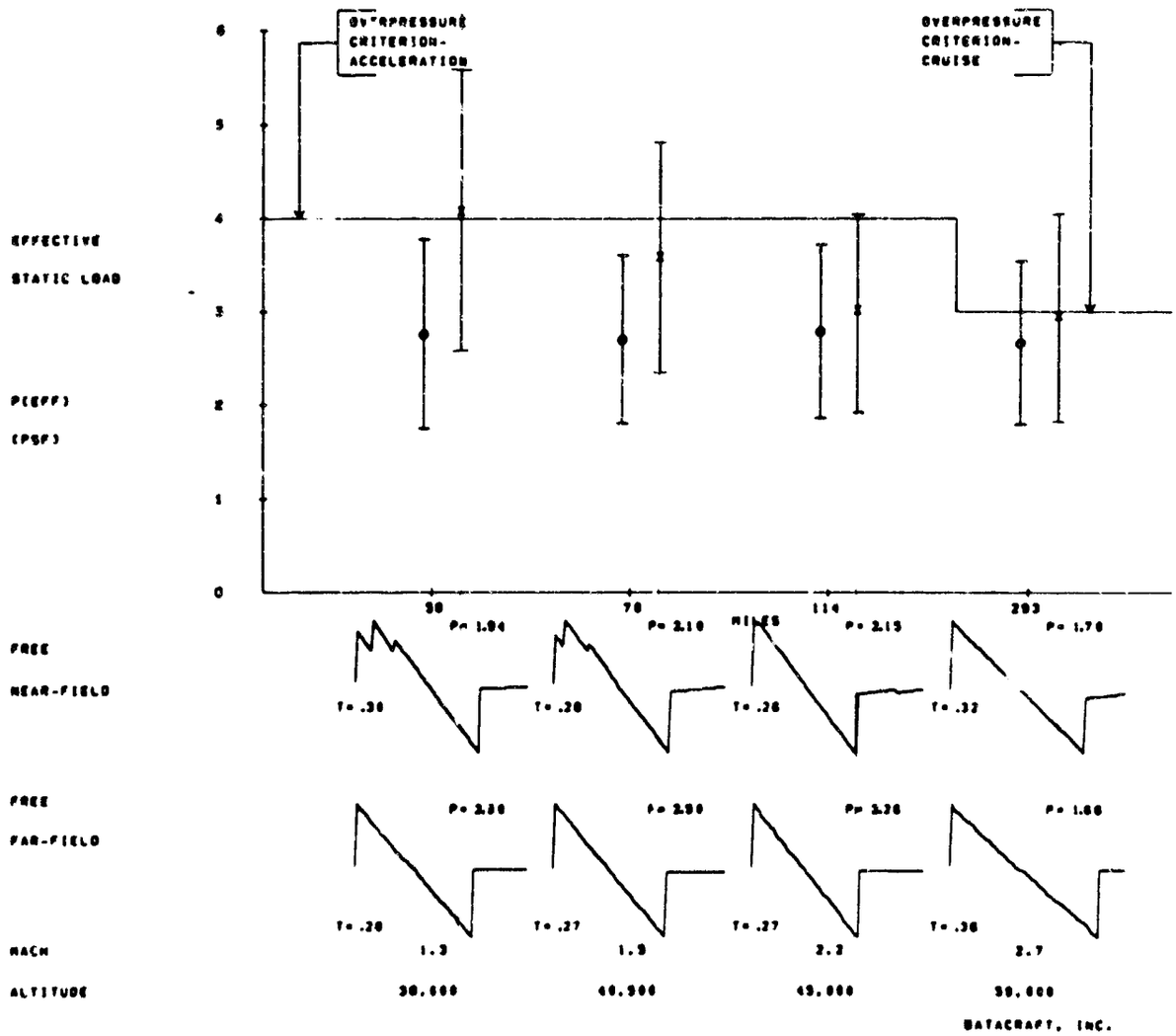


Figure 45

COMPARISON OF NEAR-FIELD WITH FAR-FIELD EFFECTIVE STATIC LOAD

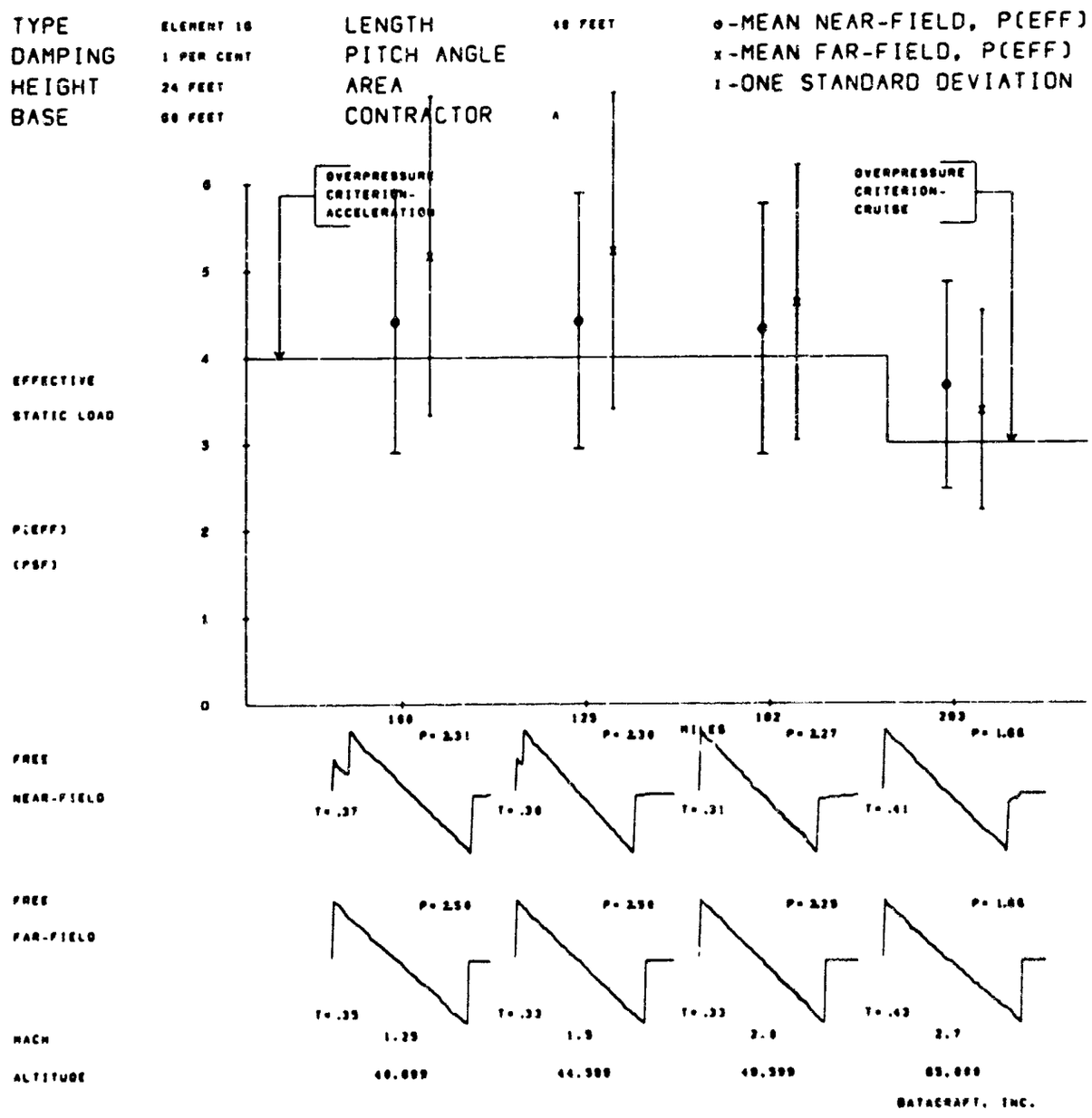


Figure 46

COMPARISON OF NEAR-FIELD WITH FAR-FIELD EFFECTIVE STATIC LOAD

TYPE	ELEMENT 16	LENGTH	40 FEET	o-MEAN NEAR-FIELD, P(EFF)
DAMPING	1 PER CENT	PITCH ANGLE		x-MEAN FAR-FIELD, P(EFF)
HEIGHT	24 FEET	AREA		I-ONE STANDARD DEVIATION
BASE	60 FEET	CONTRACTOR	9	

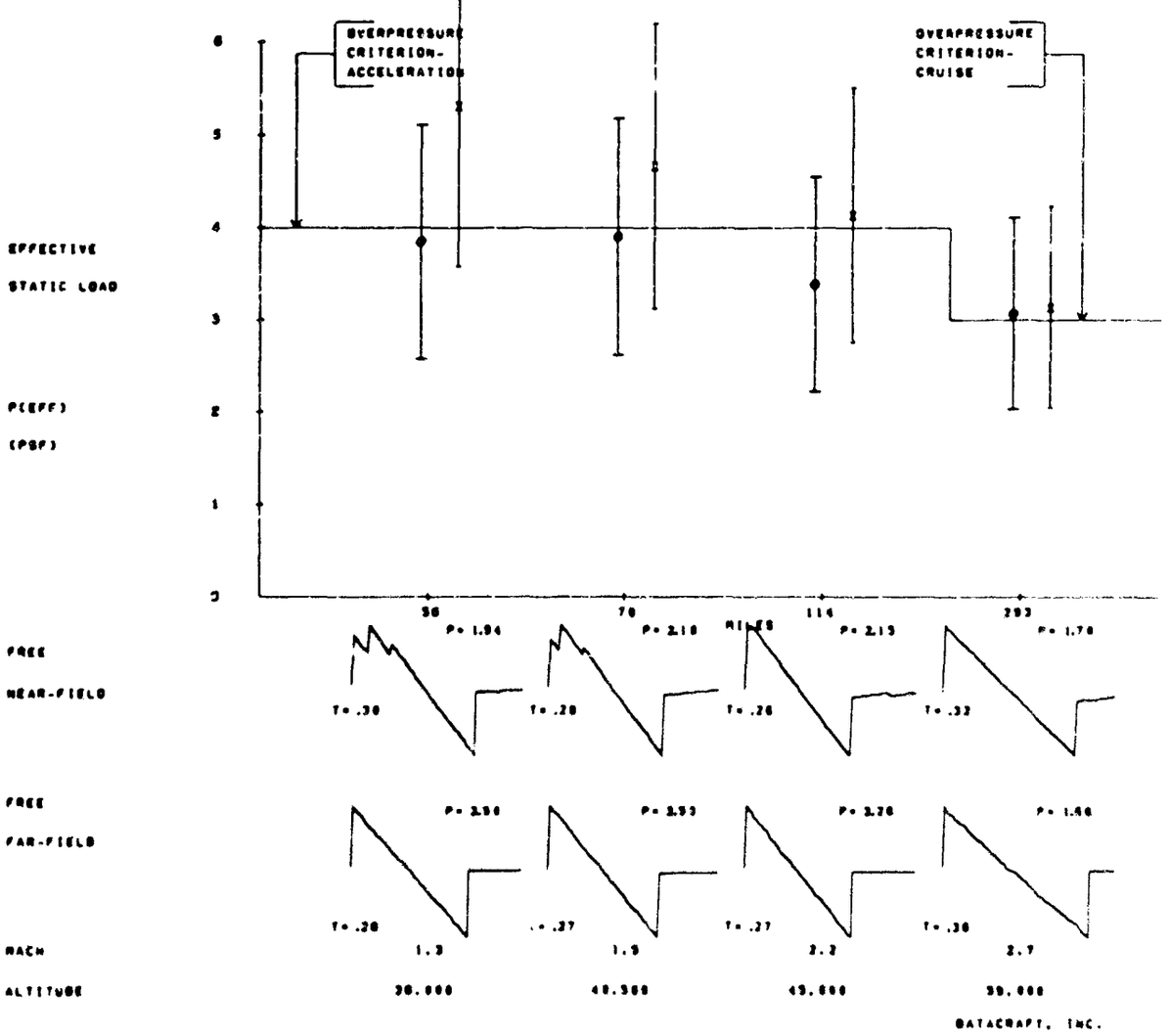


Figure 47

COMPARISON OF NEAR-FIELD WITH FAR-FIELD EFFECTIVE STATIC LOAD

TYPE	SEGMENT 17	LENGTH	100 FEET	●-MEAN NEAR-FIELD, P(EFF)
DAMPING	1 PER CENT	PITCH ANGLE		x-MEAN FAR-FIELD, P(EFF)
HEIGHT	100 FEET	AREA		I-ONE STANDARD DEVIATION
BASE	100 FEET	CONTRACTOR	A	

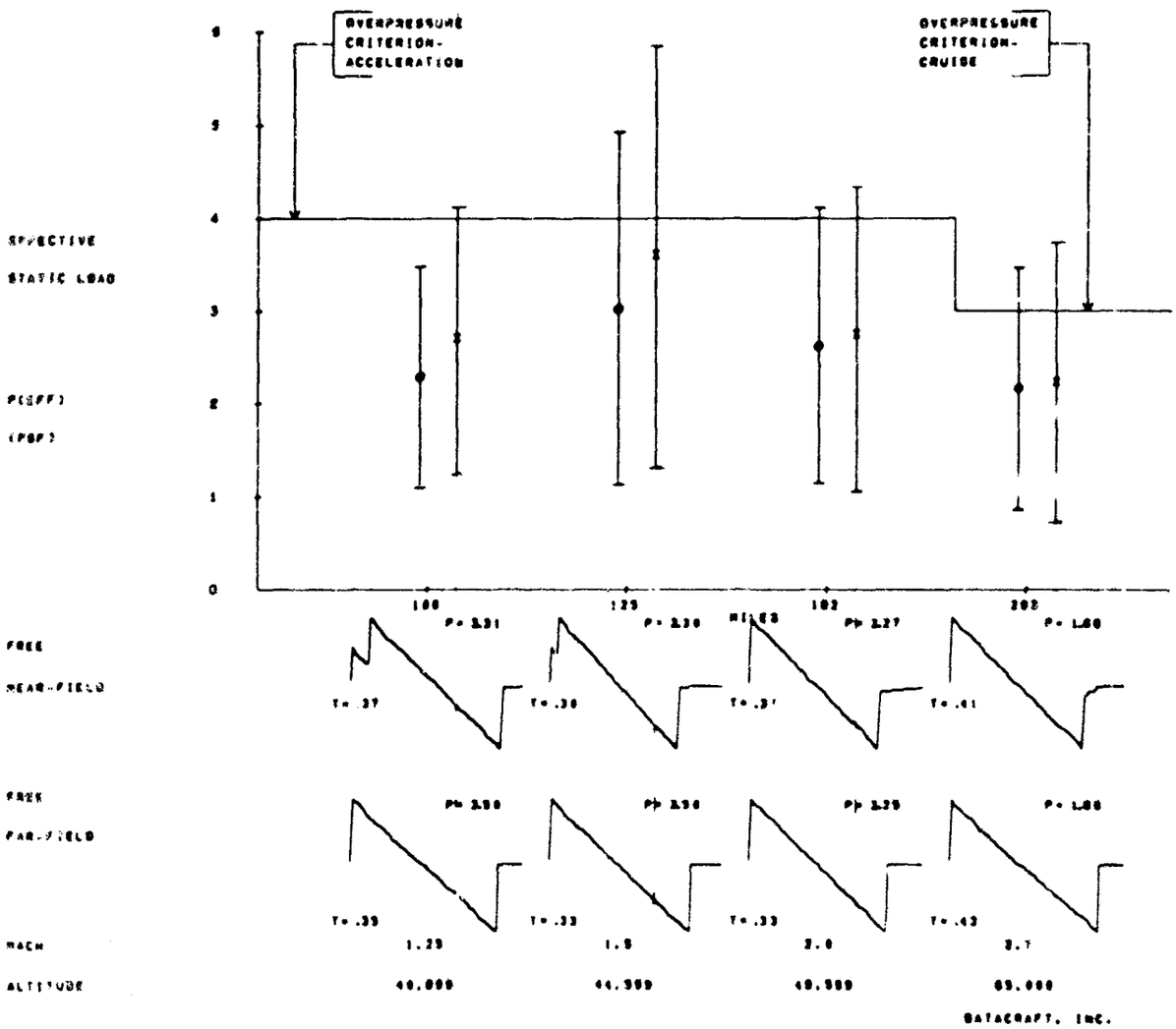


Figure 48

COMPARISON OF NEAR-FIELD WITH FAR-FIELD EFFECTIVE STATIC LOAD

TYPE	ELEMENT 17	LENGTH	100 FEET	●-MEAN NEAR-FIELD, P(EFF)
DAMPING	1 PER CENT	PITCH ANGLE		x-MEAN FAR-FIELD, P(EFF)
HEIGHT	100 FEET	AREA		↕-ONE STANDARD DEVIATION
BASE	100 FEET	CONTRACTOR	0	

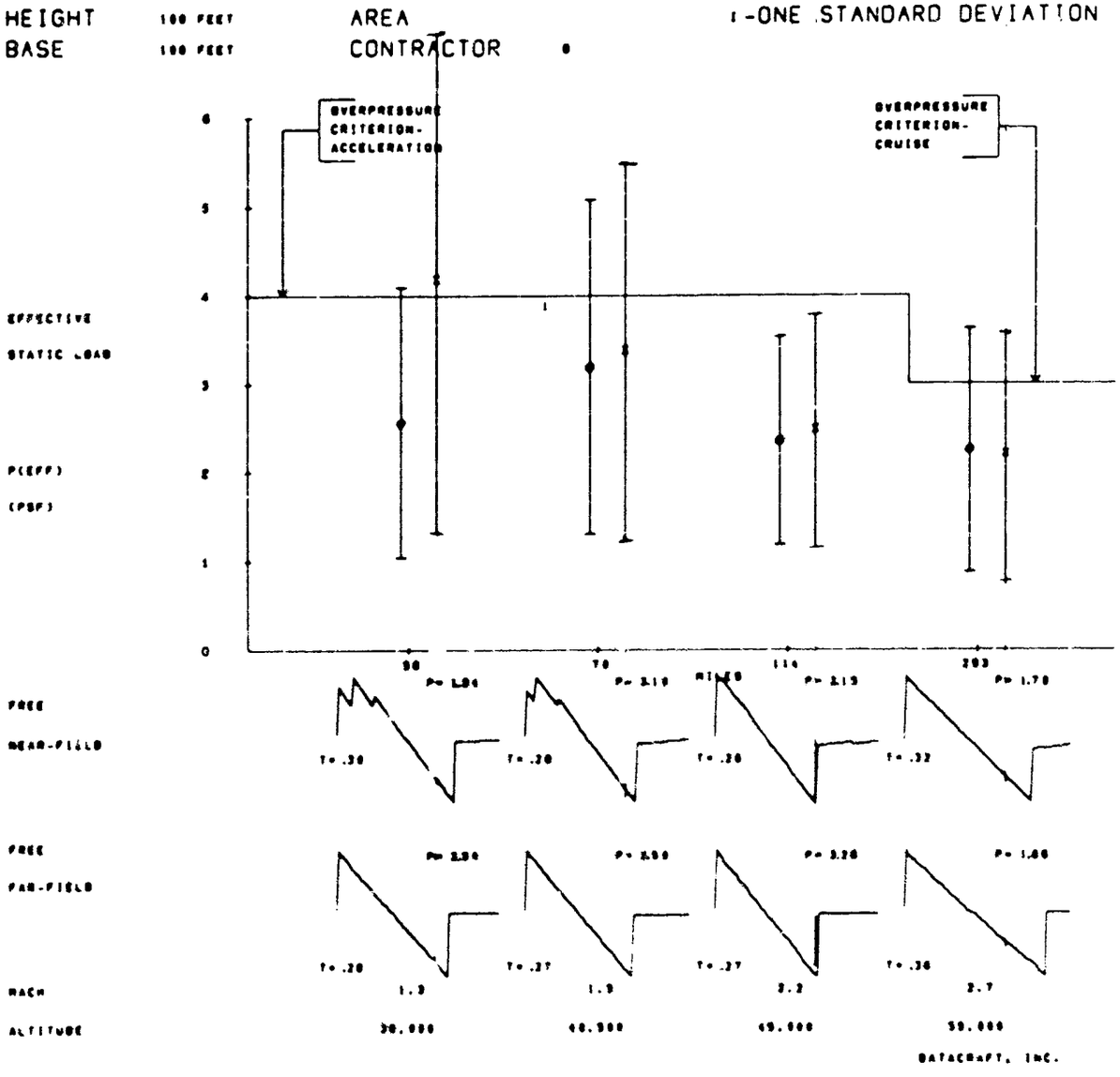


Figure 49

COMPARISON OF NEAR-FIELD WITH FAR-FIELD EFFECTIVE STATIC LOAD

TYPE	ELEMENT 10	LENGTH	100 FEET	o-MEAN NEAR-FIELD, P(EFF)
DAMPING	1 PER CENT	PITCH ANGLE		x-MEAN FAR-FIELD, P(EFF)
HEIGHT	100 FEET	AREA		I-ONE STANDARD DEVIATION
BASE	100 FEET	CONTRACTOR	A	

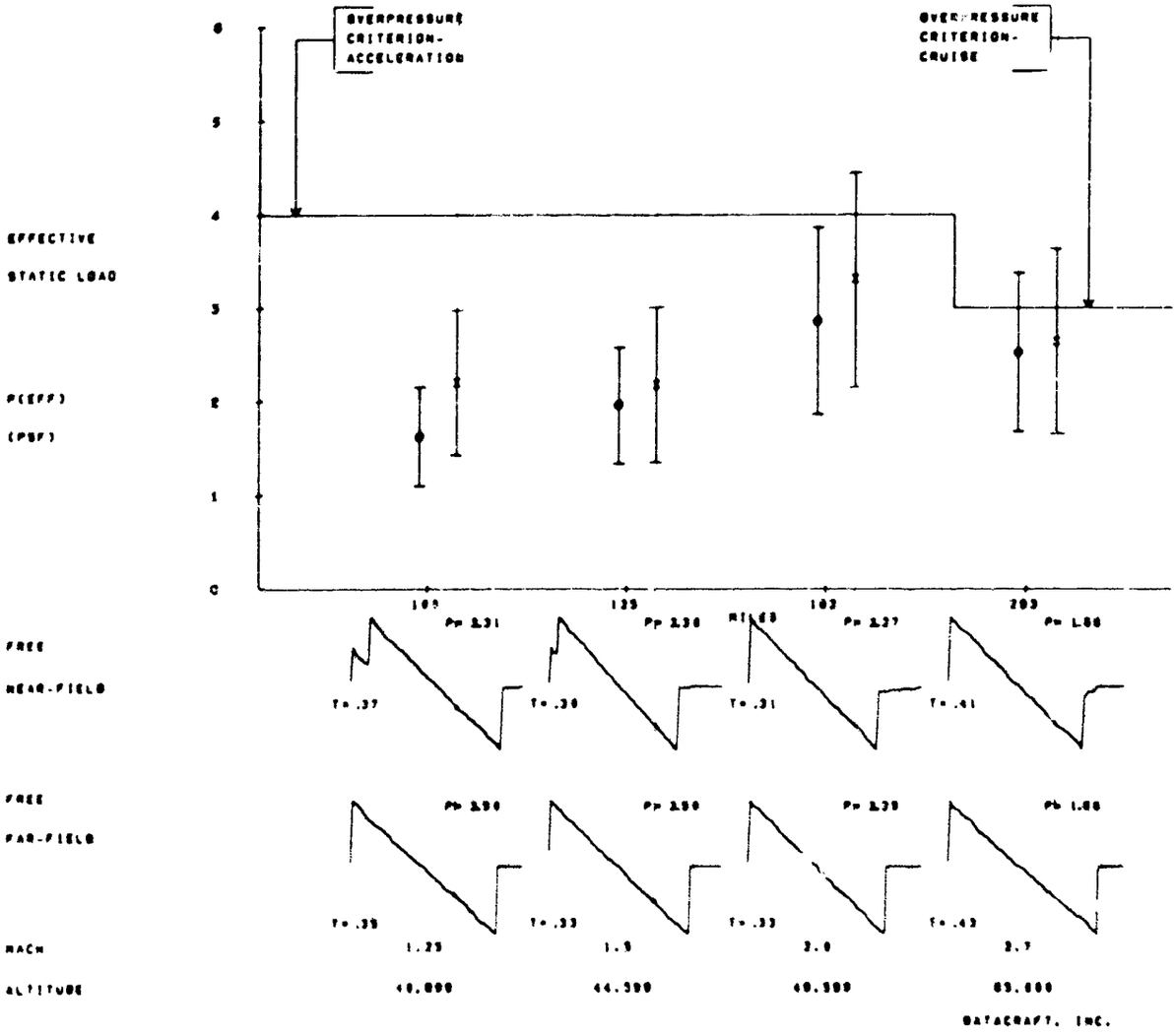


Figure 50

COMPARISON OF NEAR-FIELD WITH FAR-FIELD EFFECTIVE STATIC LOAD

TYPE	ELEMENT 18	LENGTH	100 FEET	o-MEAN NEAR-FIELD, P(EFF)
DAMPING	1 PER CENT	PITCH ANGLE		x-MEAN FAR-FIELD, P(EFF)
HEIGHT	100 FEET	ARC°		I-ONE STANDARD DEVIATION
BASE	100 FEET	CONTRACTOR	B	

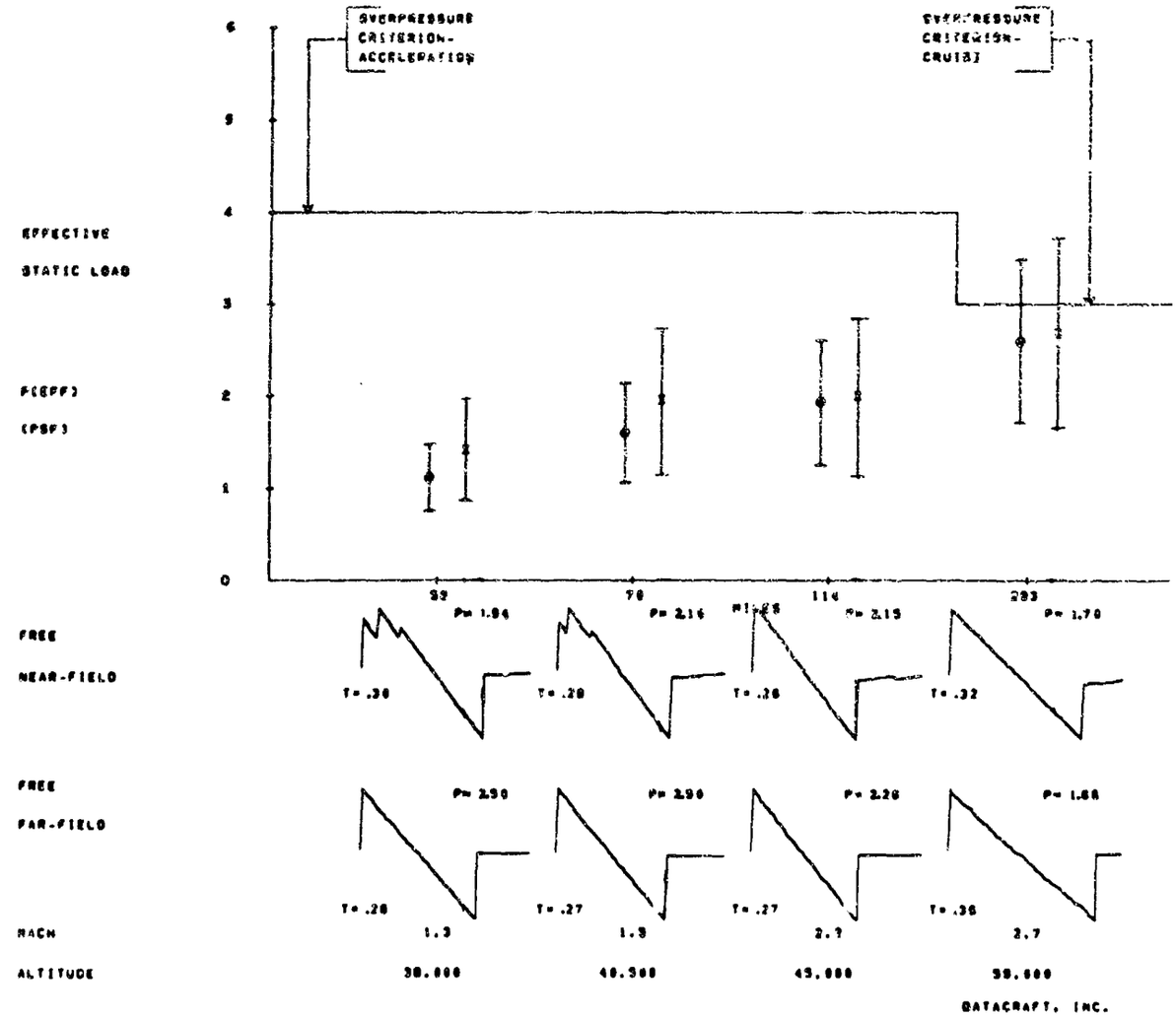


Figure 51

COMPARISON OF NEAR-FIELD WITH FAR-FIELD EFFECTIVE STATIC LOAD

TYPE	ELEMENT 1	LENGTH	199 FEET	ø-MEAN NEAR-FIELD, P(EFF)
DAMPING	1 PER CENT	PITCH ANGLE		x-MEAN FAR-FIELD, P(EFF)
HEIGHT	108 FEET	AREA		ı-ONE STANDARD DEVIATION
BASE	369 FEET	CONTRACTOR	A	

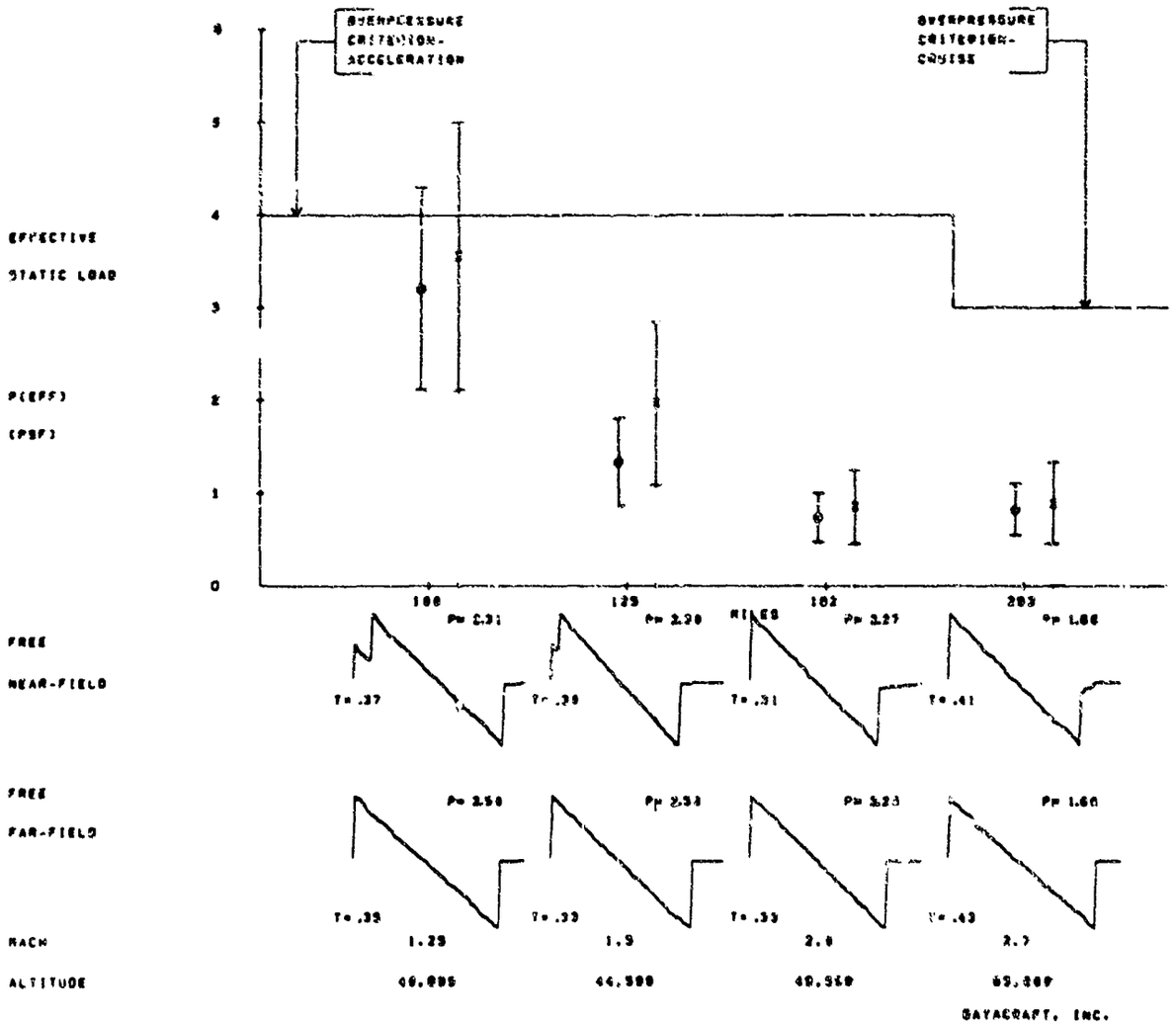


Figure 52

4 look quite similar. Even so, the near-field or third order theory would give lower intensity values on the average for all conditions. This results probably because the negative impulse is somewhat smaller for near than for the symetric far-field waves in all conditions.

At this point, we must repeat that the near-field theory should not be confused with near-field conditions. The near-field theory gives a finer approximation of the boom wave than the far-field theory. Near-field conditions, on the other hand, are those where the observer is in such a position that auxiliary shocks from various parts of the aircraft can still be distinguished.

The above table can indicate what is causing the near-field intensity to be lower than the far. DAF is relatively unchanged but the P(max) ratios are virtually the same as the P(eff) ratios. Near-field intensity is lower because of lower effective loading feedback conditions. One might question, therefore, the wave fabrication technique, but the identical procedure was used in each case.

Ratios of standard deviation for far vs. near-field values of P(max), P(eff) and DAF were compared in a similar manner as that above for mean values. The results are presented below:

Ratios for Far vs. Near-Field
Values of σ[P(max)], σ[P(eff)] and σ(DAF)

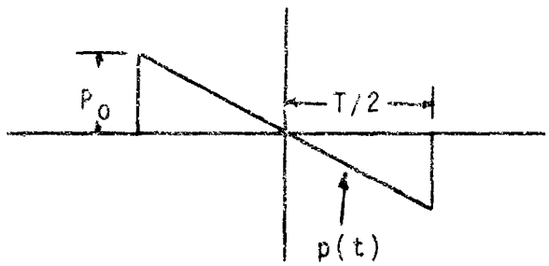
	Contractor A			Contractor B		
Condition	σ[P(max)]	σ(P(eff)]	σ(DAF)	σ[P(max)]	σ[P(eff)]	σ(DAF)
1	1.36	1.26	1.08	1.49	1.43	1.27
2	1.36	1.26	1.04	1.49	1.25	1.13
3	0.98	1.09	1.04	1.19	1.12	1.20
4	0.99	1.03	0.88	0.96	1.04	1.04

The standard deviation ratios of intensity vary little from the ratios of the mean. This indicates that no significant differences in the coefficient of variation should exist between near and far-field conditions.

As a final observation, coefficients of variation for P(eff) were computed for selected waveforms and elements (Appendix B). It was noted in all cases that they were lower for P(eff) than for either P(max) or the 40 percent value introduced into the

peak free-field overperssure during computation. This suggests that the coefficient of variation for structural damage to any one particular element will be lower than that expected for free-field overpressure.

Some feeling for differences between near-field and far-field (N-wave) waveforms can be obtained by comparing their Fourier spectra. The spectrum of an N wave of the form shown below is:



$$P(j\omega) = j \frac{2P_o}{T\omega^2} \left[-T\omega \cos \frac{\omega T}{2} + 2 \sin \frac{\omega T}{2} \right] \qquad (10)$$

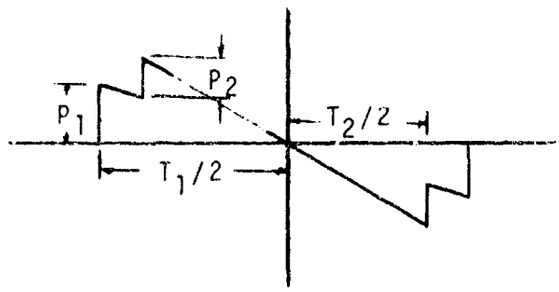
The high frequency asymptote of the peaks is given by,

$$P(j\omega) \approx j \frac{2P_o}{\omega} \quad , \qquad (11)$$

and the low frequency asymptote by,

$$P(j\omega) \approx j \frac{P_o \omega T^2}{6} \quad . \qquad (12)$$

If a near-field wave is approximated by the sum of two N waves,



its spectrum is given by,

$$P(j\omega) = \frac{j2P_1}{T_1\omega^2}\left[-\omega T_1 \cos\frac{\omega T_1}{2} + 2\sin\frac{\omega T_1}{2}\right] + \frac{j2P_2}{T_2\omega^2}\left[-\omega T_2 \cos\frac{\omega T_2}{2} + 2\sin\frac{\omega T_2}{2}\right] \quad (13)$$

The corresponding high frequency and low frequency asymptotes are given by,

$$P(j\omega) \simeq \frac{j2\,(P_1 + P_2)}{\omega} \quad , \quad (14)$$

and

$$P(j\omega) \simeq \frac{j\omega}{6}\,(P_1T_1^2 + P_2T_2^2) \quad . \quad (15)$$

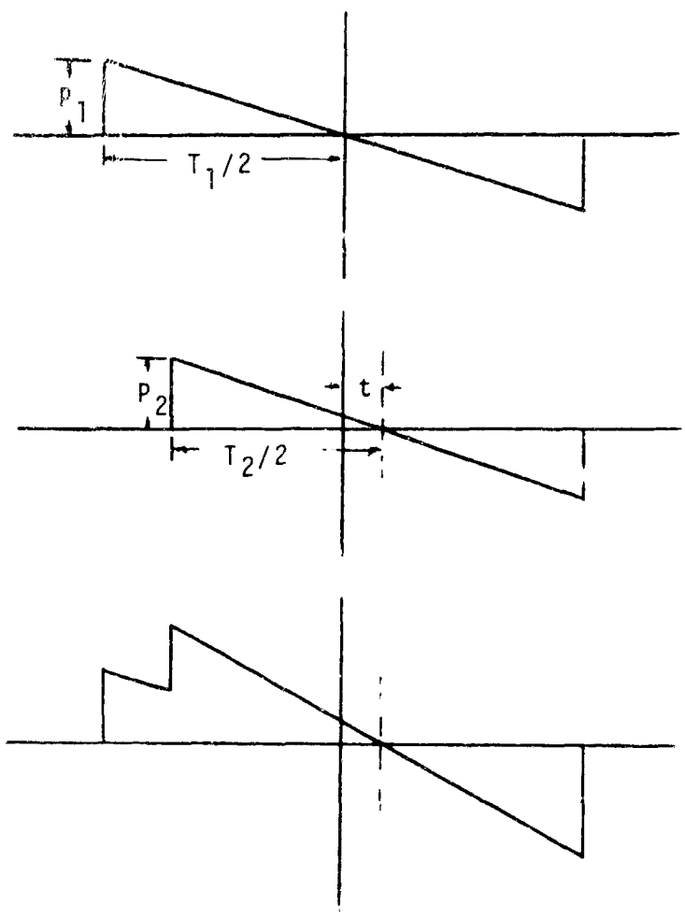
Examination of the asymptotic behavior for the two cases indicates that, ω_o, the peak of $P(j\omega)$, will be shifted to a somewhat higher frequency for the near-field case. The high and low frequency asymptotes for the N-wave intersect at a frequency, ω_o, determined by the equation,

$$j\frac{2P_o}{\omega_o} = j\frac{P_o\omega_o T_o^2}{6} \quad ,$$

or

$$\omega_o = 12/T_o \quad . \quad (16)$$

In reality, the near-field waveform is not symetrical as shown above. It looks more like the following:



And:

$$P(j\omega) = \frac{j2P_1}{T_1\omega^2}\left[-\omega T_1 \cos\frac{\omega T_1}{2} + 2\sin\frac{\omega T_1}{2}\right]$$

$$+ \frac{2P_2}{T_2\omega^2}(\cos\omega t\, j - \sin\omega t)\left[j2\sin\frac{\omega T_2}{2} - jT_2\omega\cos\frac{\omega T_2}{2}\right]. \quad (17)$$

The spectral envelopes of such a function lies, for the most part, below those for both the symetrical near-field and far-field cases. Unfortunately, reality is still not modeled even with the more complex waveform, because the positive impulse shift suggested by Young (33) is not yet introduced into the wave. Introducing this added effect would have the effect of lowering the true near-field spectral envelopes in the frequency ranges of interest even further, keeping maximum positive overpressure constant.

The results derived seem to correlate with those derived during damage tests. During investigation of glass breakage, Maglieri et al (34) showed that the F-104 aircraft, which generates a somewhat cleaner signature in the near-field than does the F-105, was more effective in breaking glass than the F-105 at equal free-field overpressures. This would suggest from a gross standpoint that either: 1) distorted waveforms produce lower intensities than the clean N-wave; or 2) waveforms distorted in the F-104 manner produce greater intensities than the clean N-wave. Unfortunately, no clean sonic boom N-waves could be generated at the high overpressures necessary to break the glass and check the suppositions. Nevertheless, the less distorted waveform broke more glass than the more distorted one.

Simple intensity quantities have been suggested by Mayes and Newman (35) and Wiggins (17) based on the response spectrum technique. Maximum overpressure governs at certain frequencies and positive impulse governs at others. Results given below suggest that this criteria could be improved, however.

C. Effects of Airplane Size on Racking and Plate Intensities:

The intensities from far-field waves for the F-104, B-58, XB-70 and the two SST's were averaged and normalized with peak free-field overpressure for the six racking elements considered (see Appendix B). The relative results are shown in the table below:

Normalized and Averaged Values of Far-Field P(eff)
For the 6 Racking Elements Considered

	F-104	B-58	XB-70	SST
Mean τ(sec.)	0.082	0.147	0.230	0.410
Mach No.	1.50	1.22	1.86	2.7
Δp (psf)	1.60	2.50	1.80	1.66
Normalized P(eff)(psf)	2.00	1.80	1.43	1.27

The above table shows that racking decreases as τ and Mach number increase. Comparing only the racking values for the two small houses revealed virtually the same results. For plate vibrations, the reverse seems to be the case.

Normalized and Averaged Far-Field Values of P(eff) for 12 of the Plate Cases Consicered

	F-104	B-58	XB-70	SST
Mean τ (sec.)	0.082	0.147	0.230	0.410
Mach	1.50	1.22	1.86	2.7
Δp (psf)	1.60	2.50	1.80	1.66
Normalized P(eff)(psf)	0.80	1.31	1.31	1.44

The above table shows that plate vibrations can be larger under equal free-field overpressure SST's than F-104's. This might explain why the internal pressures under B-58 booms are greater than those generated by F-104's. Of course, all statements made are general and might not be true in specific instances.

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Appendix A

REPRESENTATIVE FREE-FIELD LOADING AND RESPONSE CURVES

[redacted]

NEAR FIELD THEORY
CONTRACTOR B MACH 1.3
ALTITUDE 38,000
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ACTUAL PROFILE WT. 396,000
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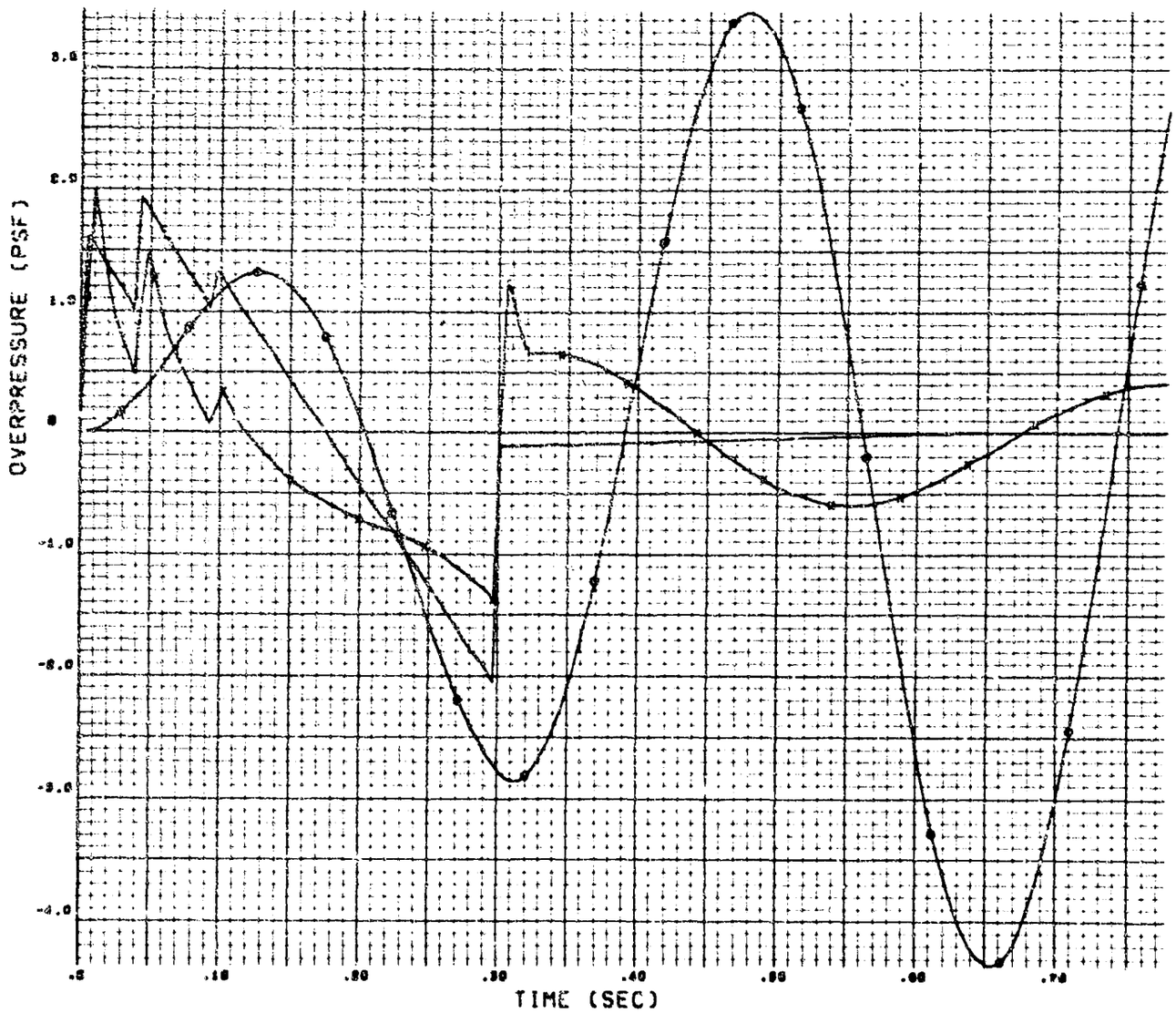
X = LOADING WAVE



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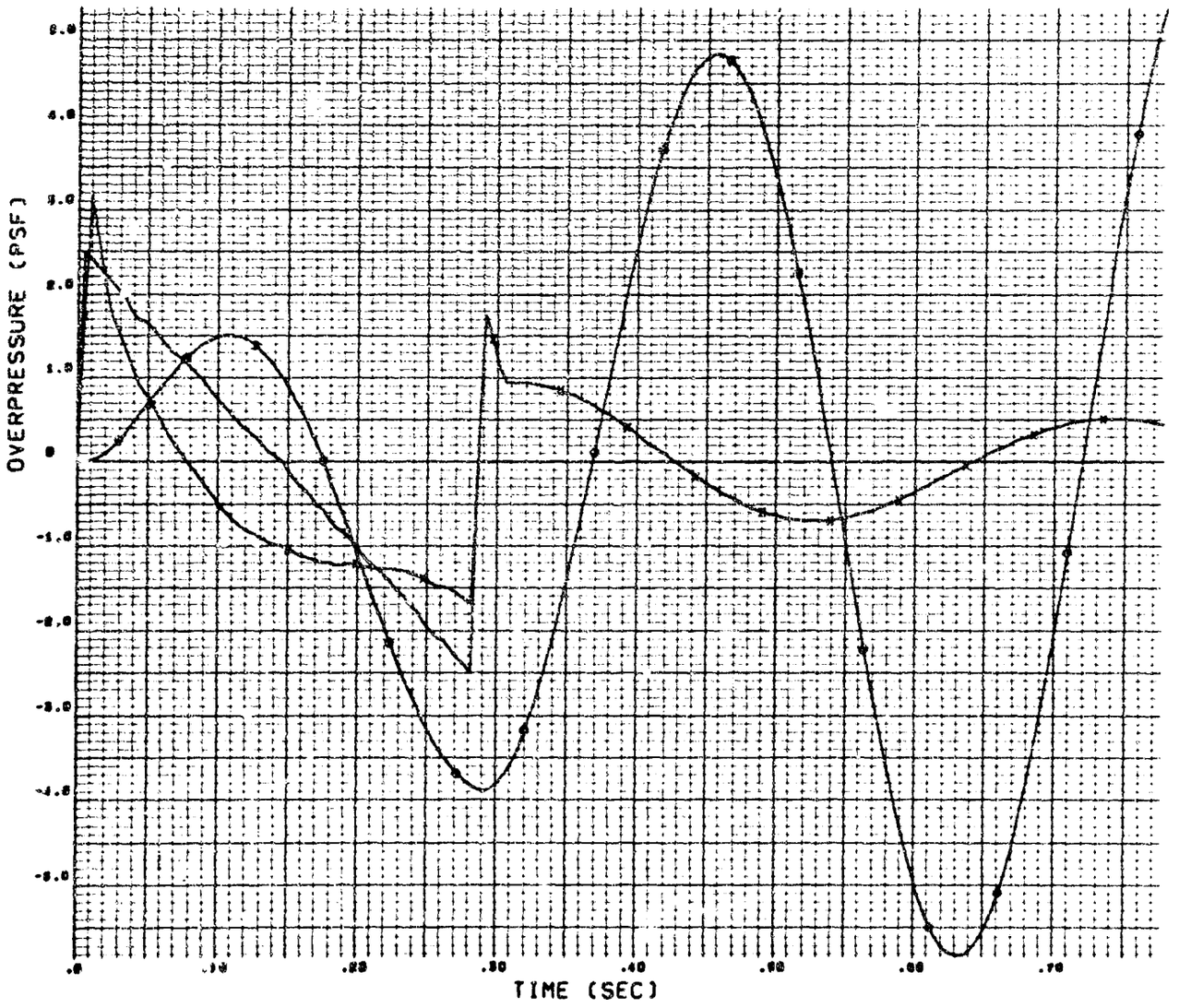

NEAR FIELD THEORY
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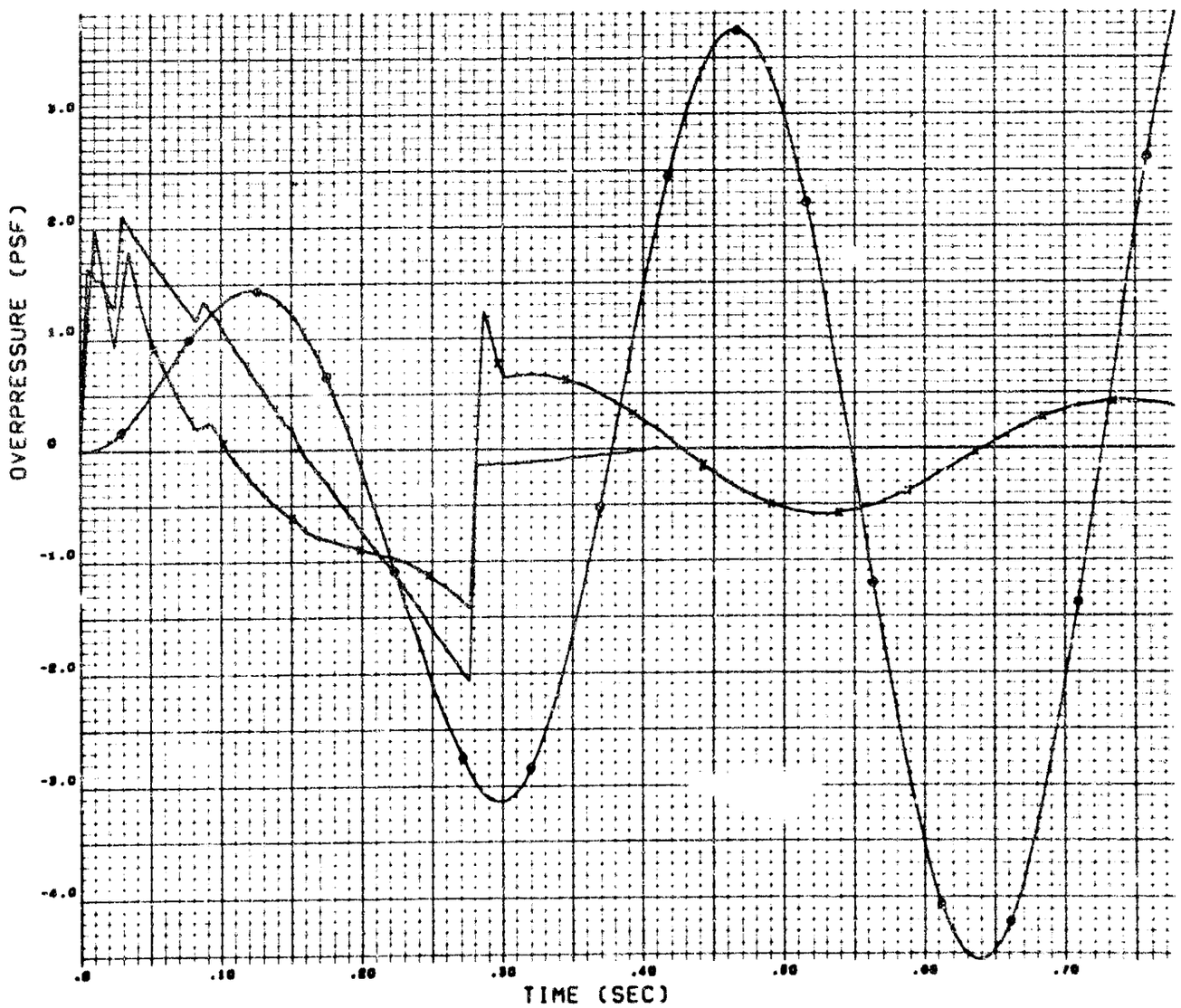

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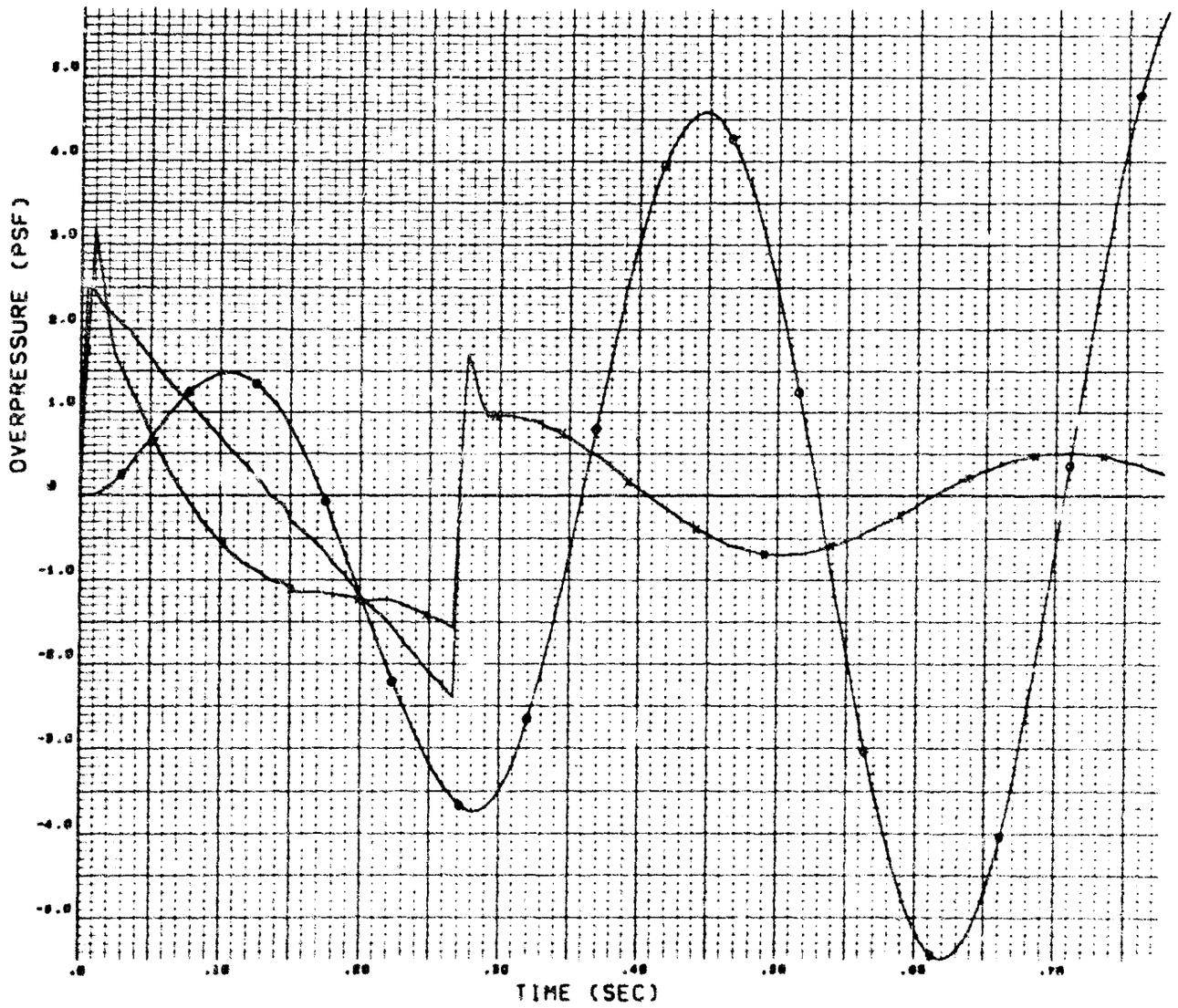

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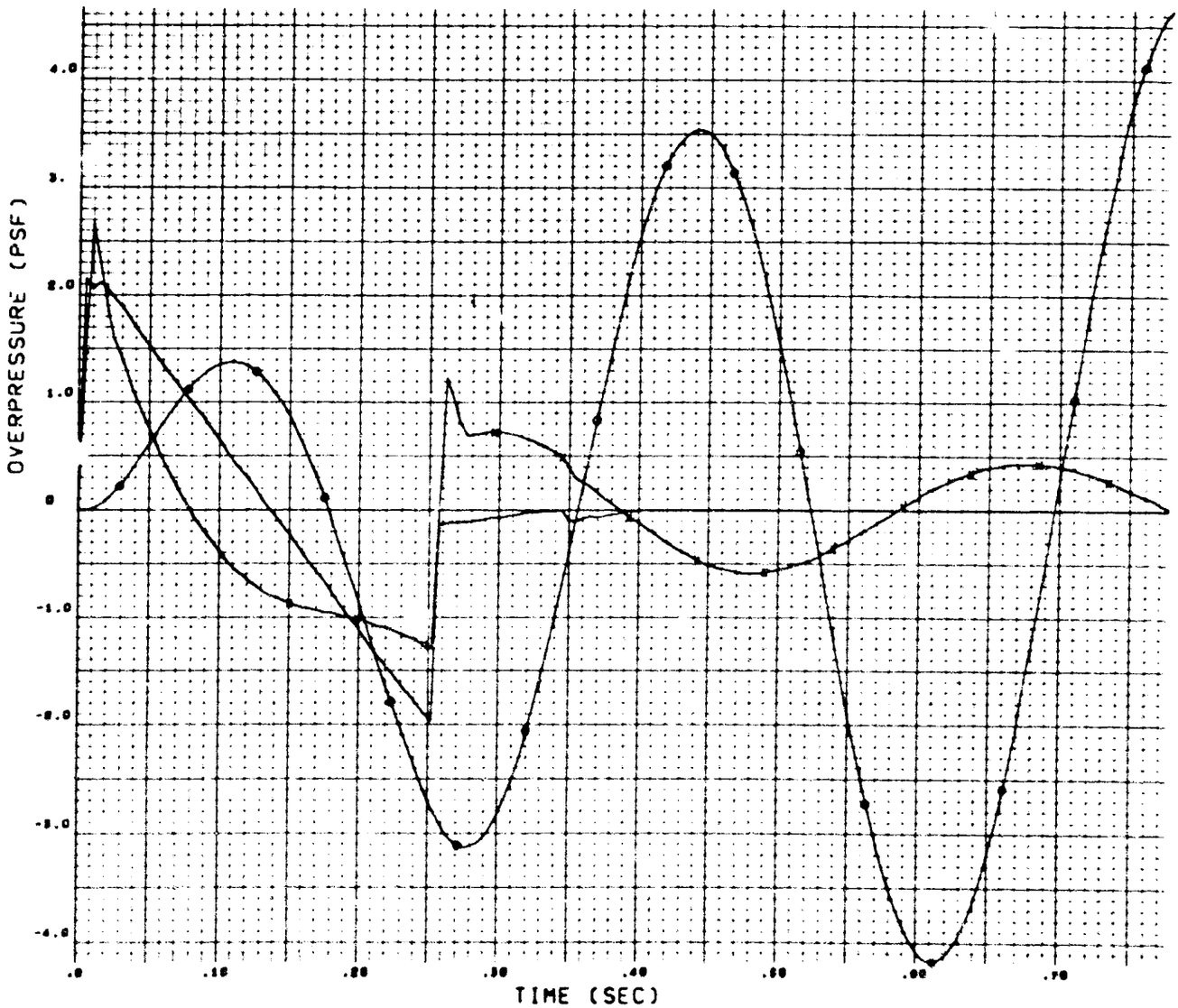

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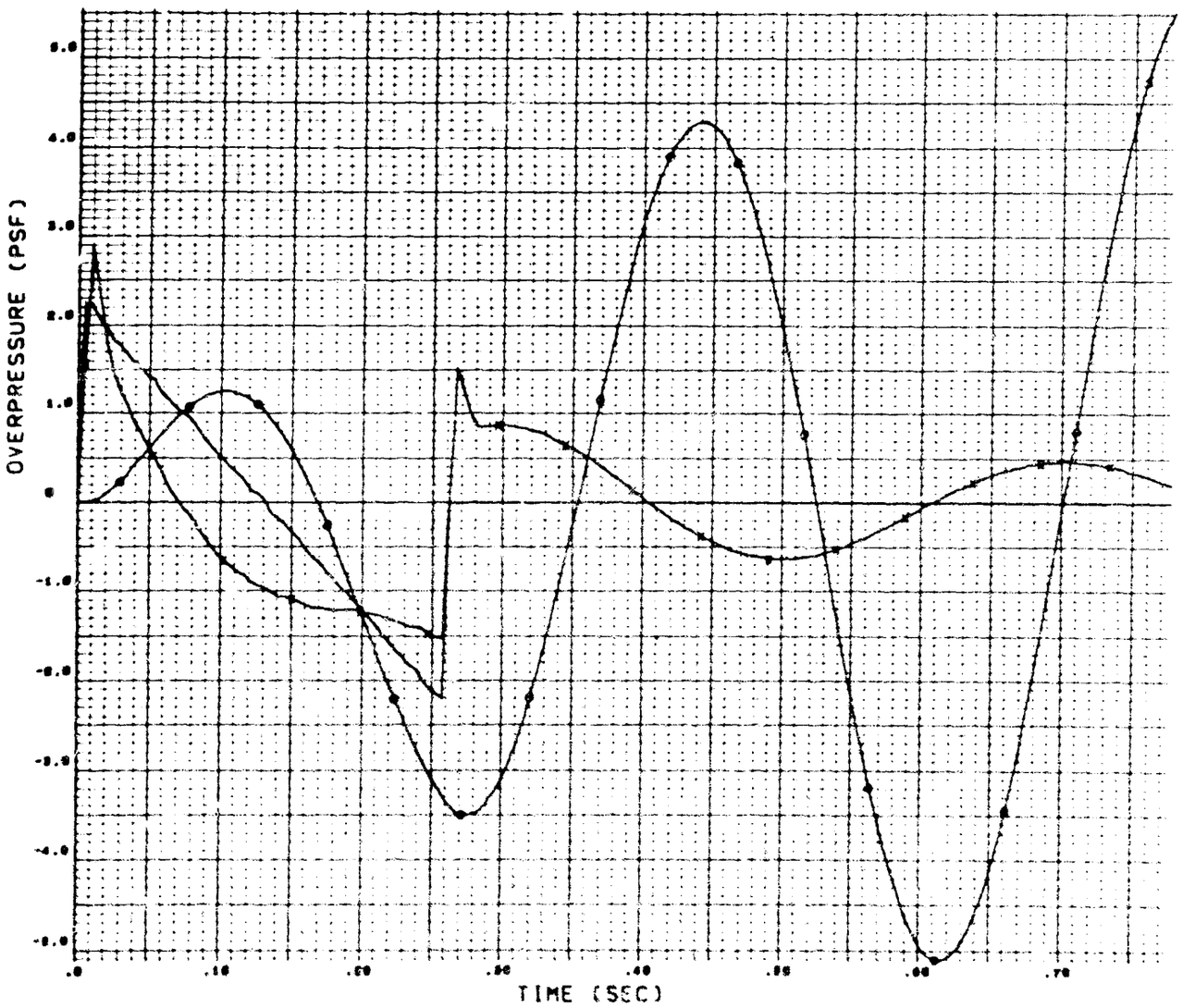

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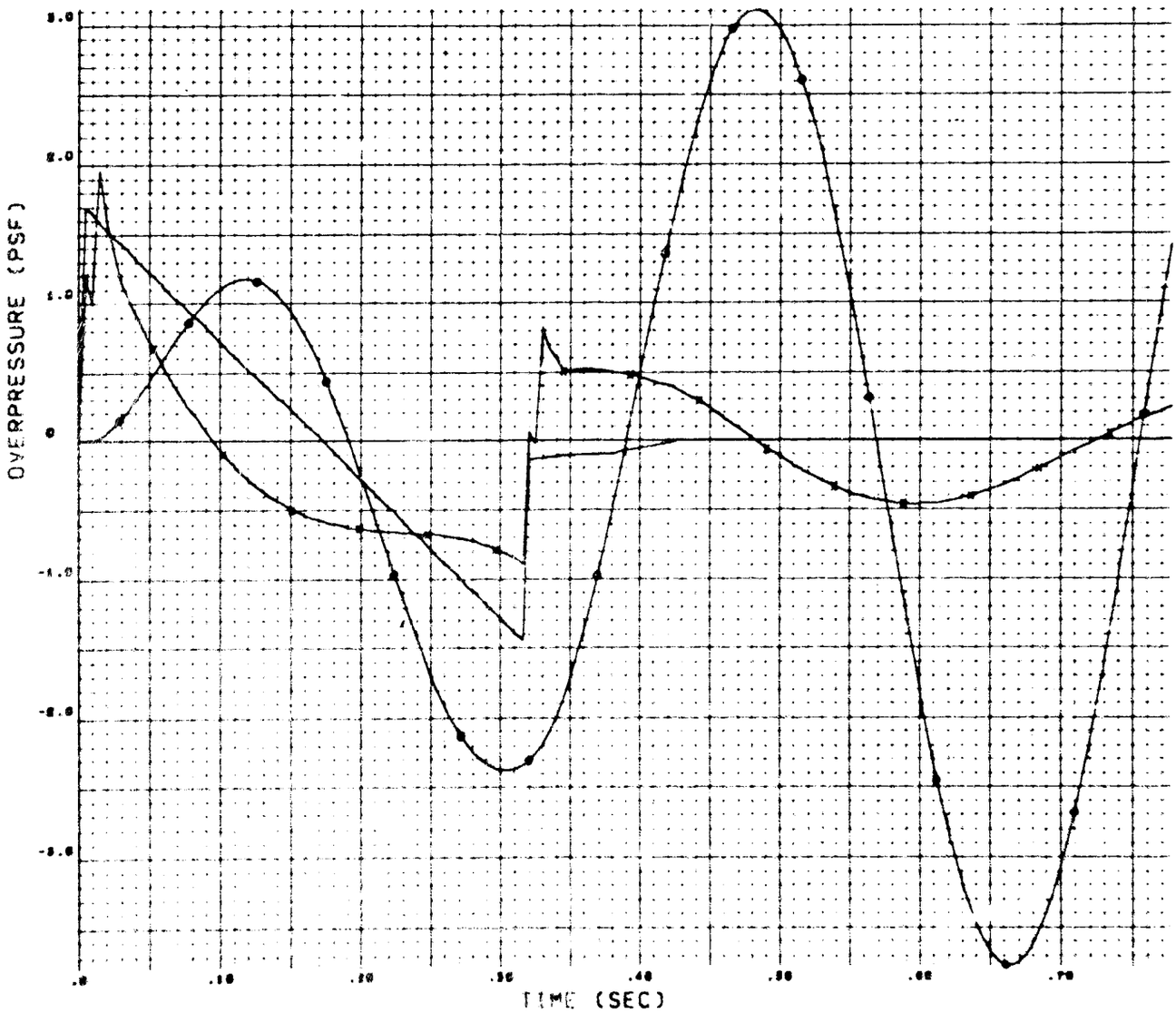

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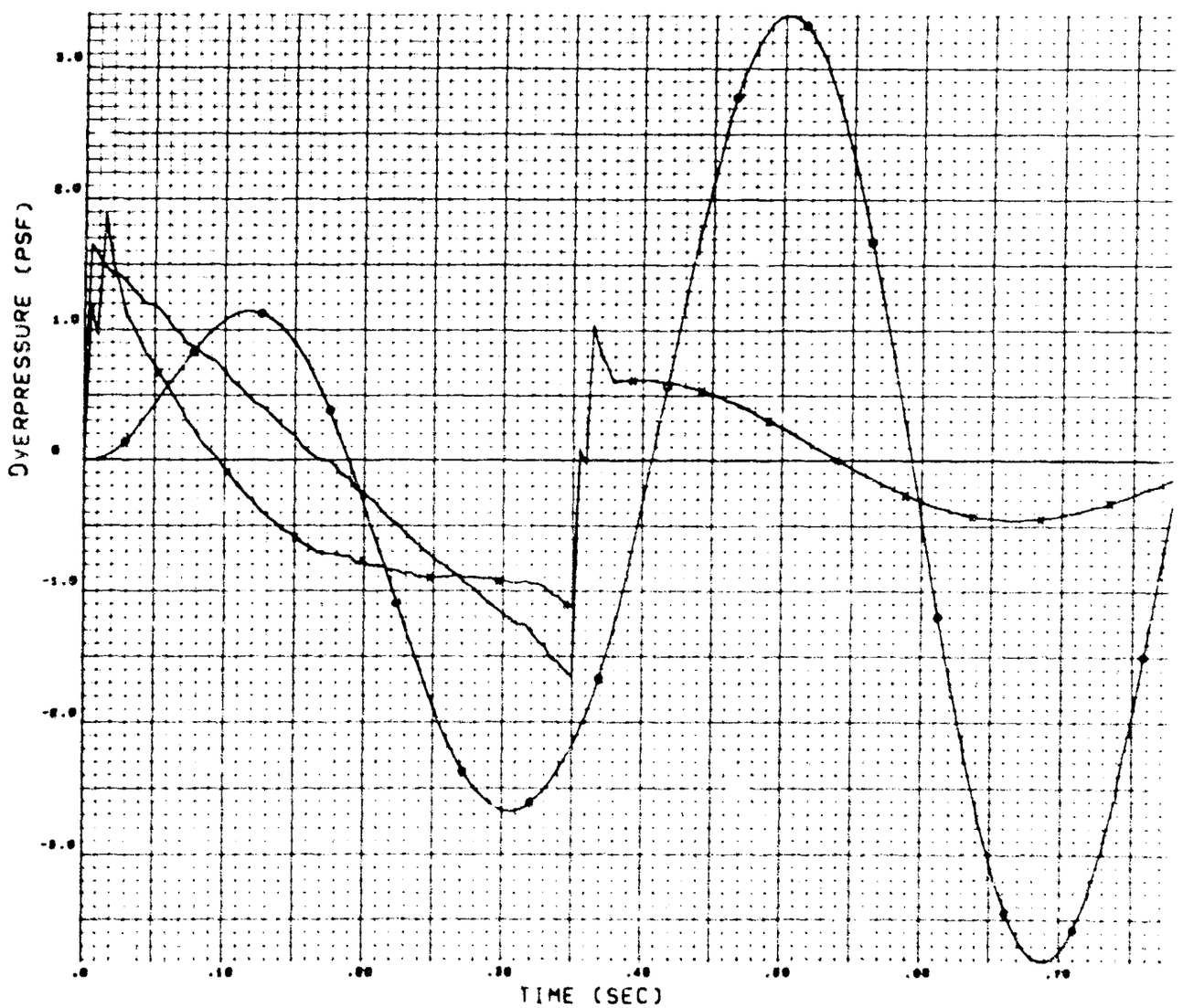

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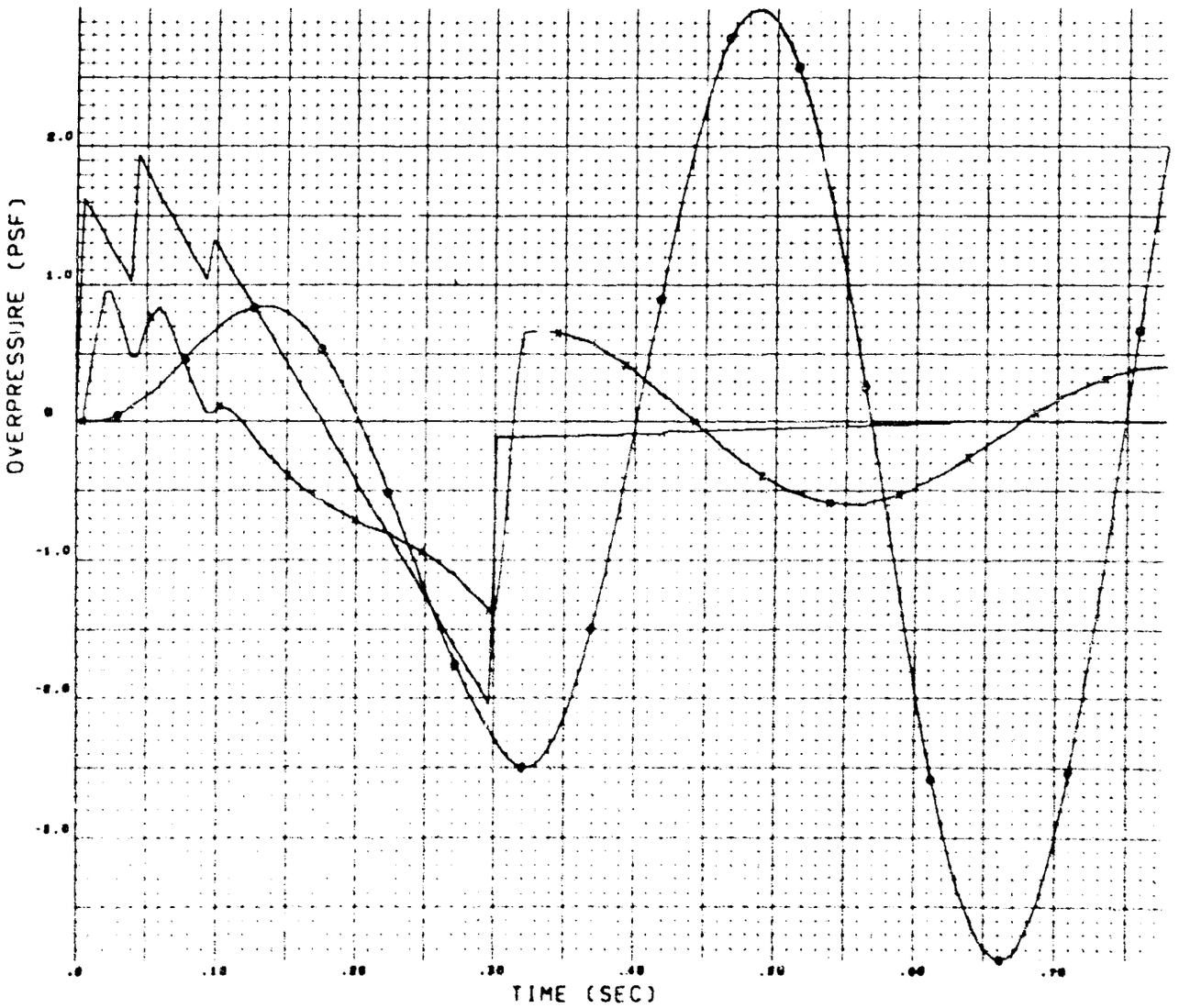

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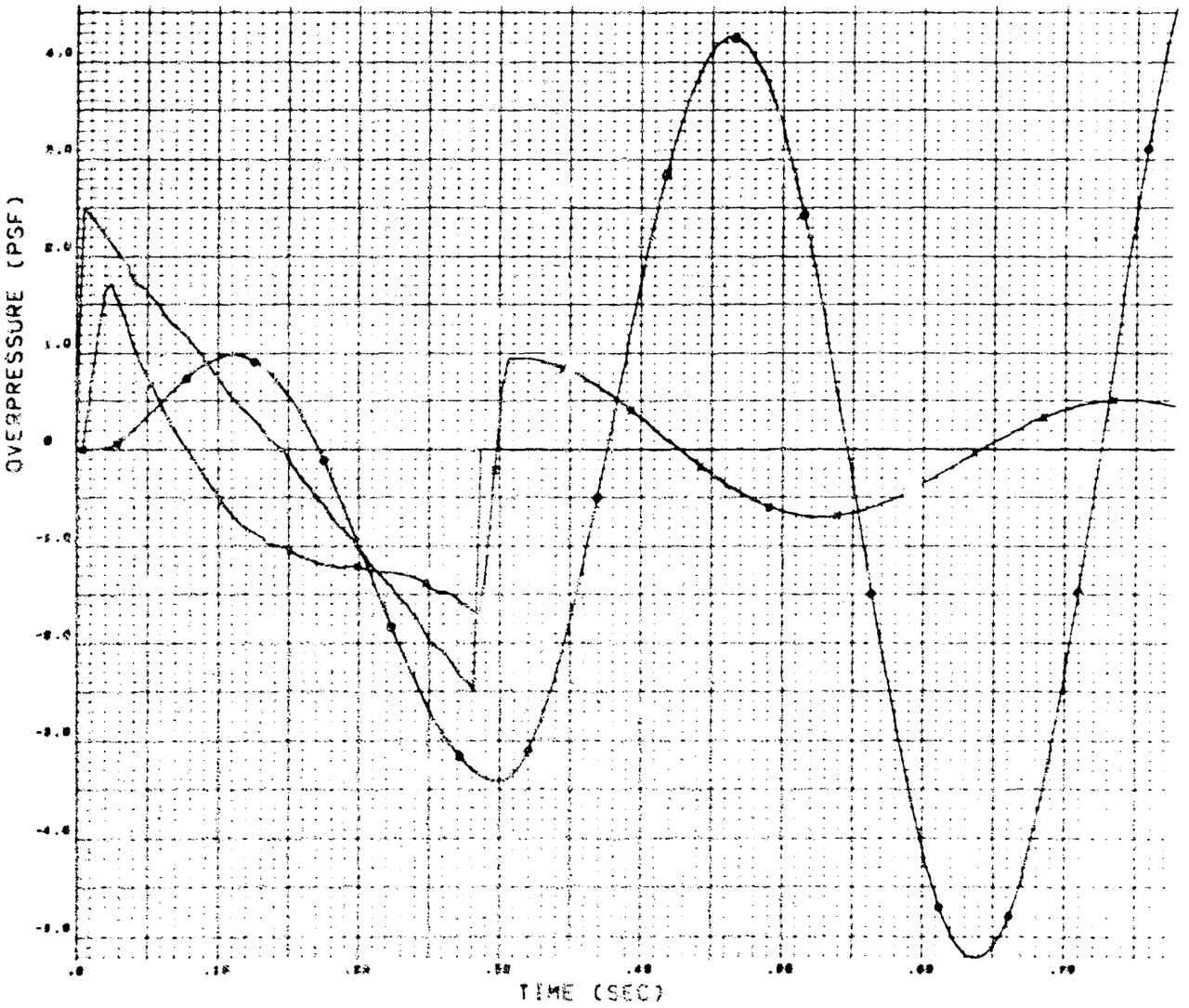

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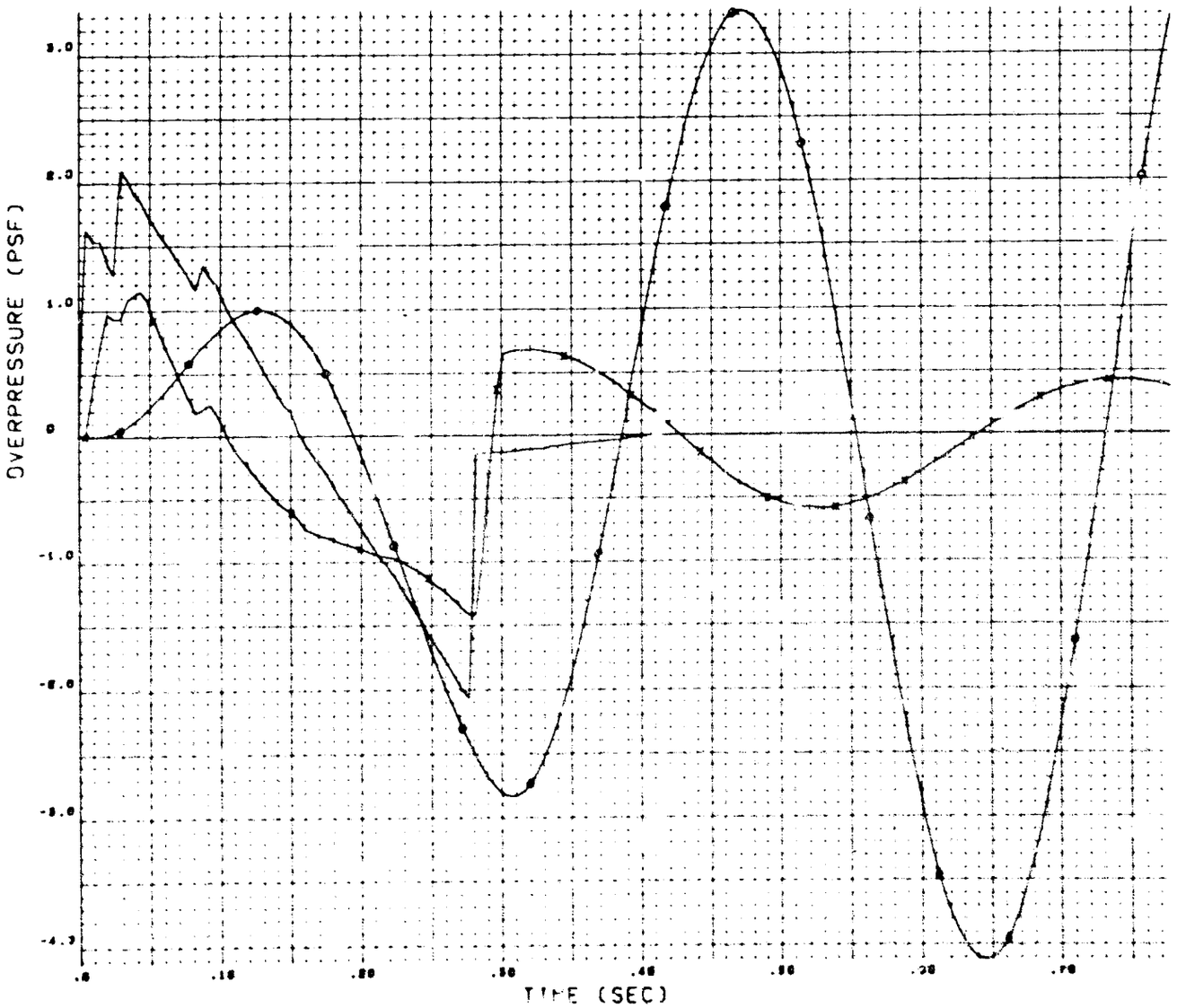

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ACTUAL PROFILE WT. — 393,000
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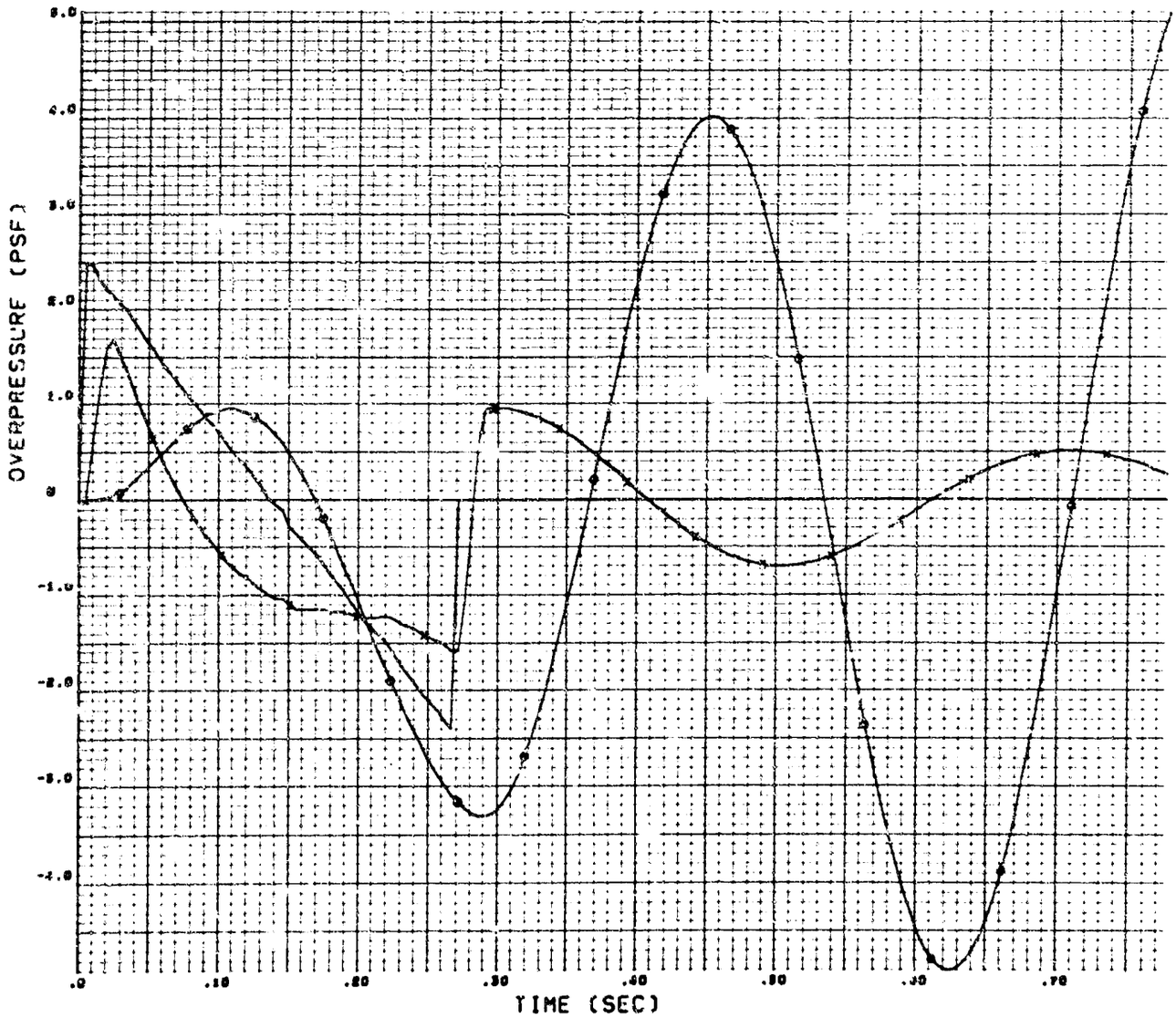

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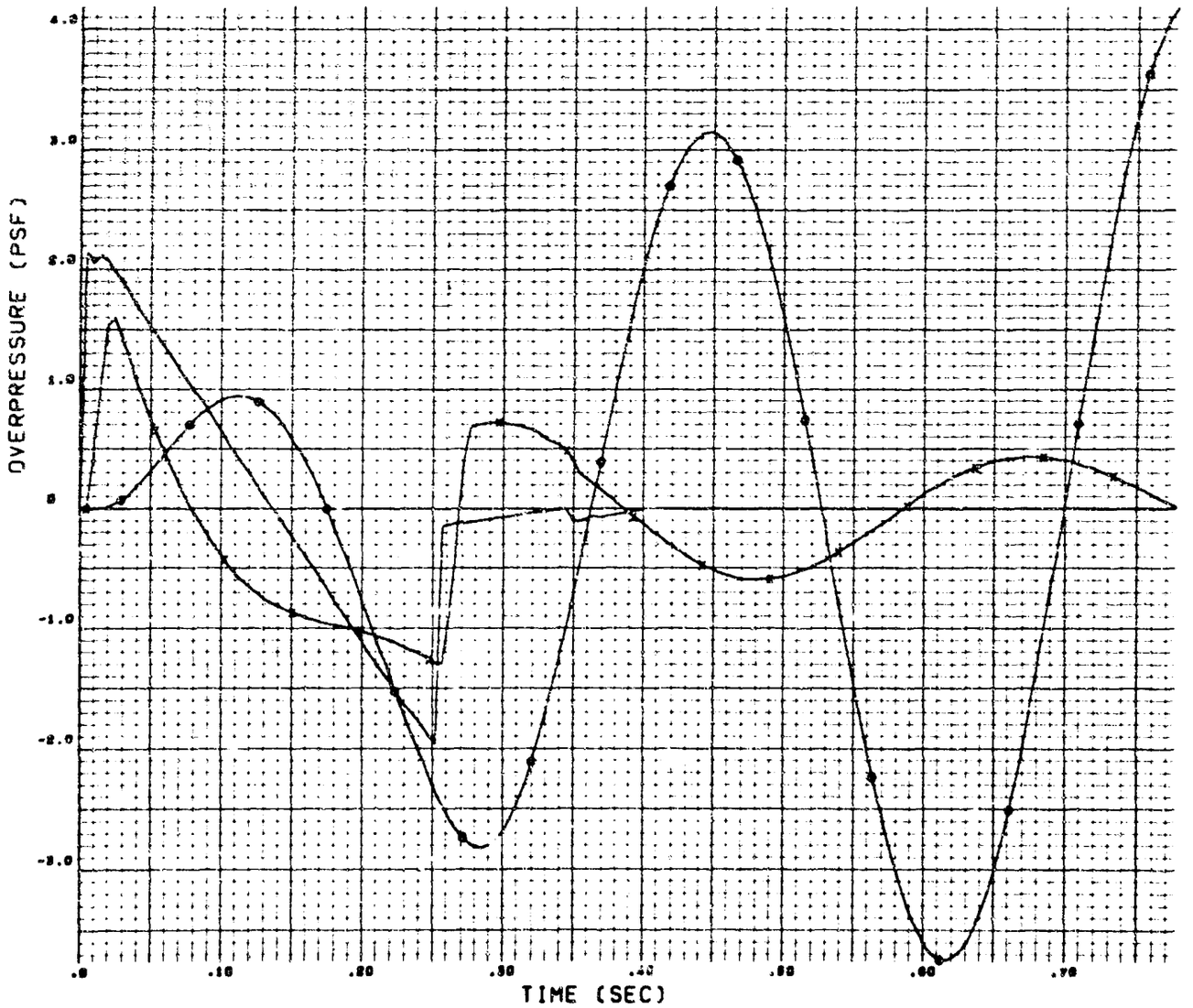

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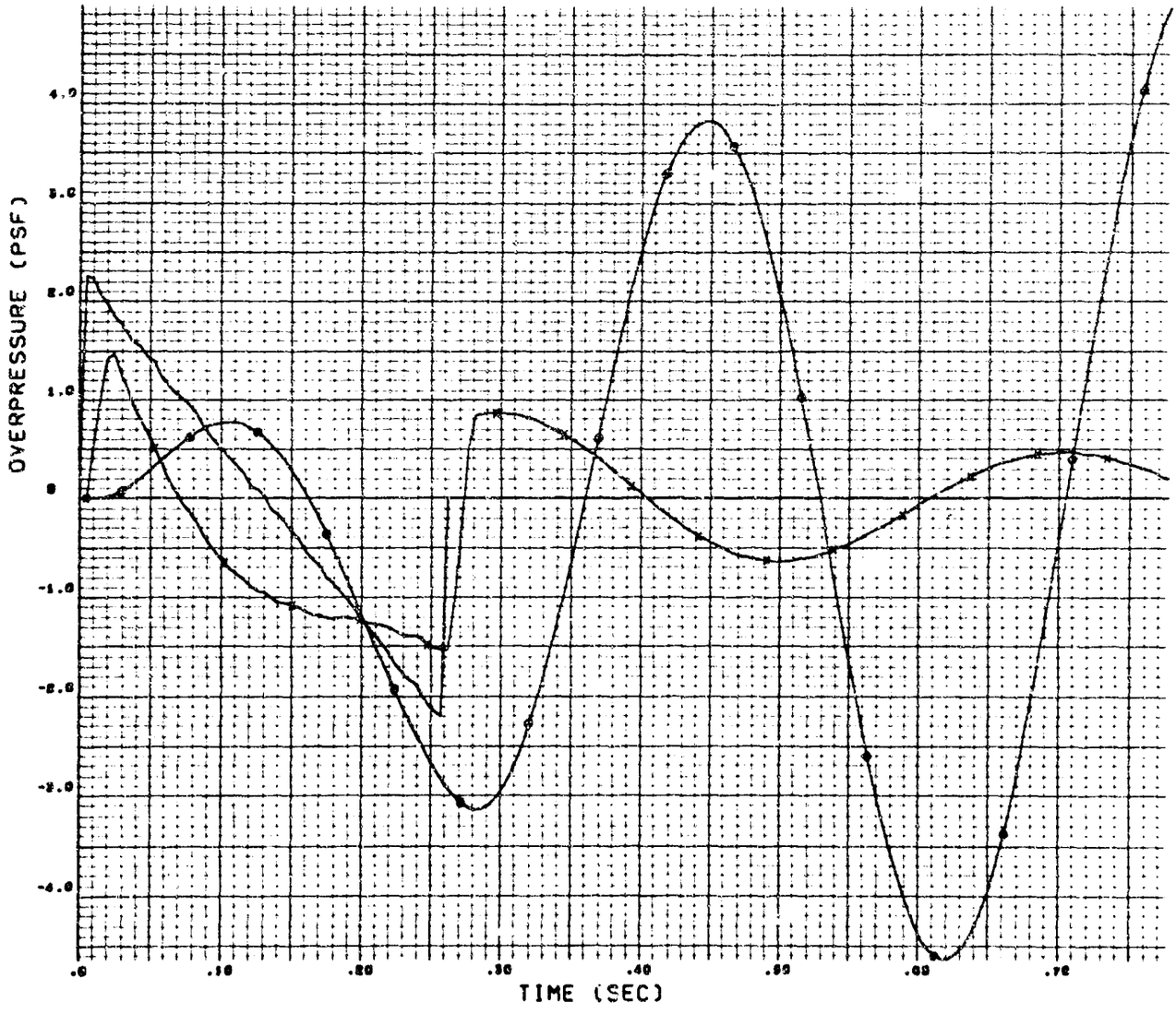

NEAR FIELD THEORY
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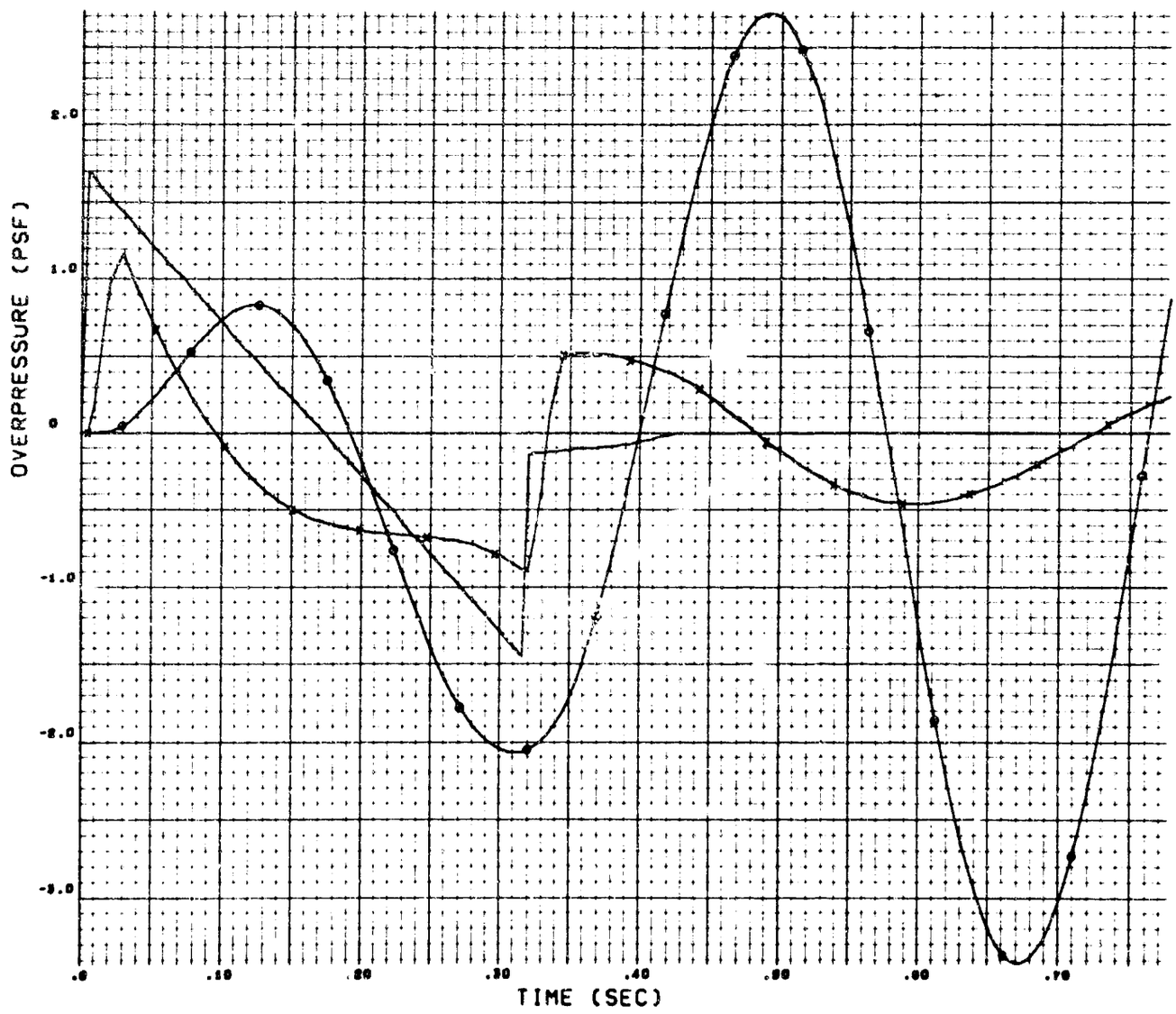

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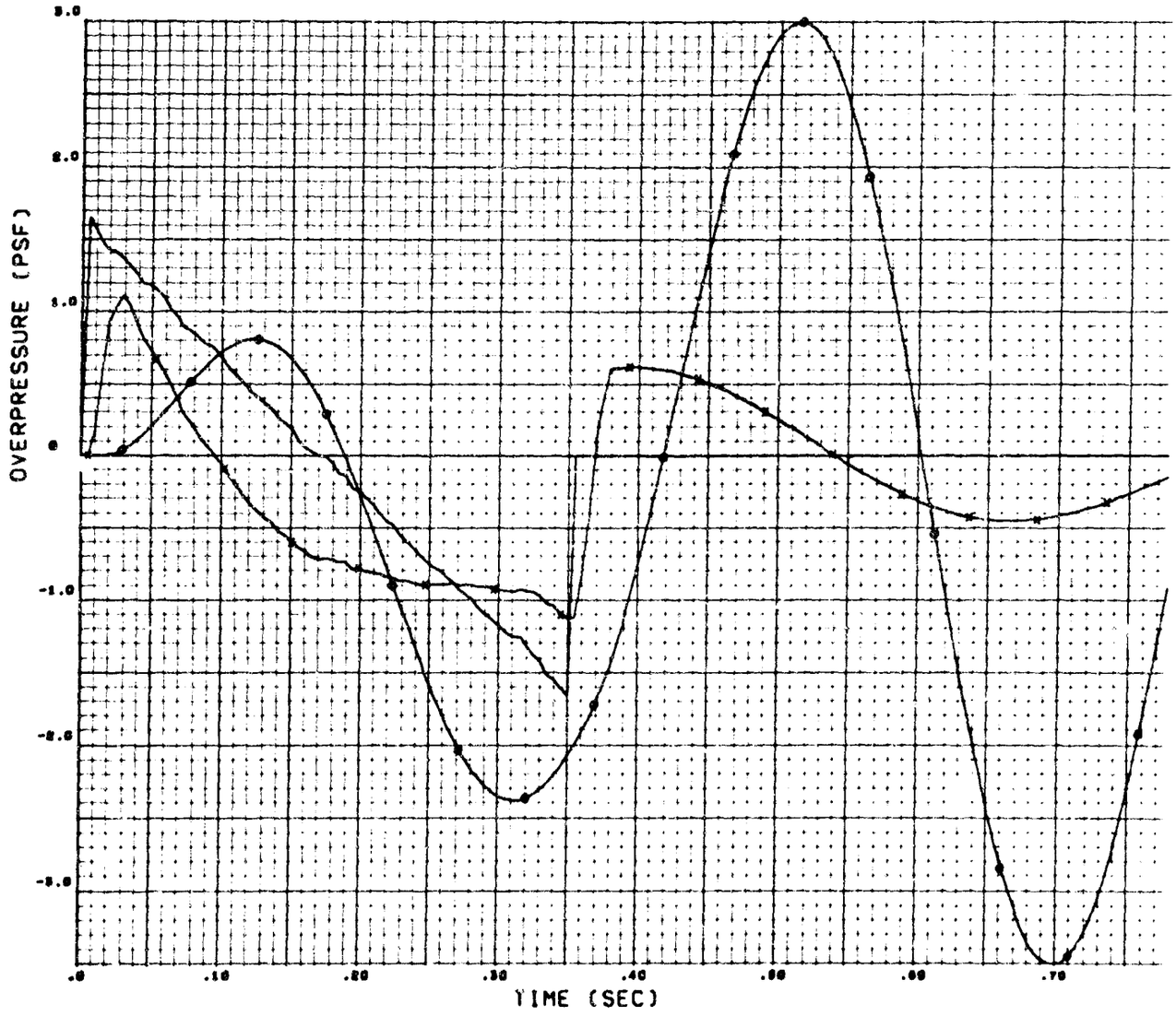

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THEORETICAL WEIGHT 150,000
ACTUAL PROFILE WT 423,900
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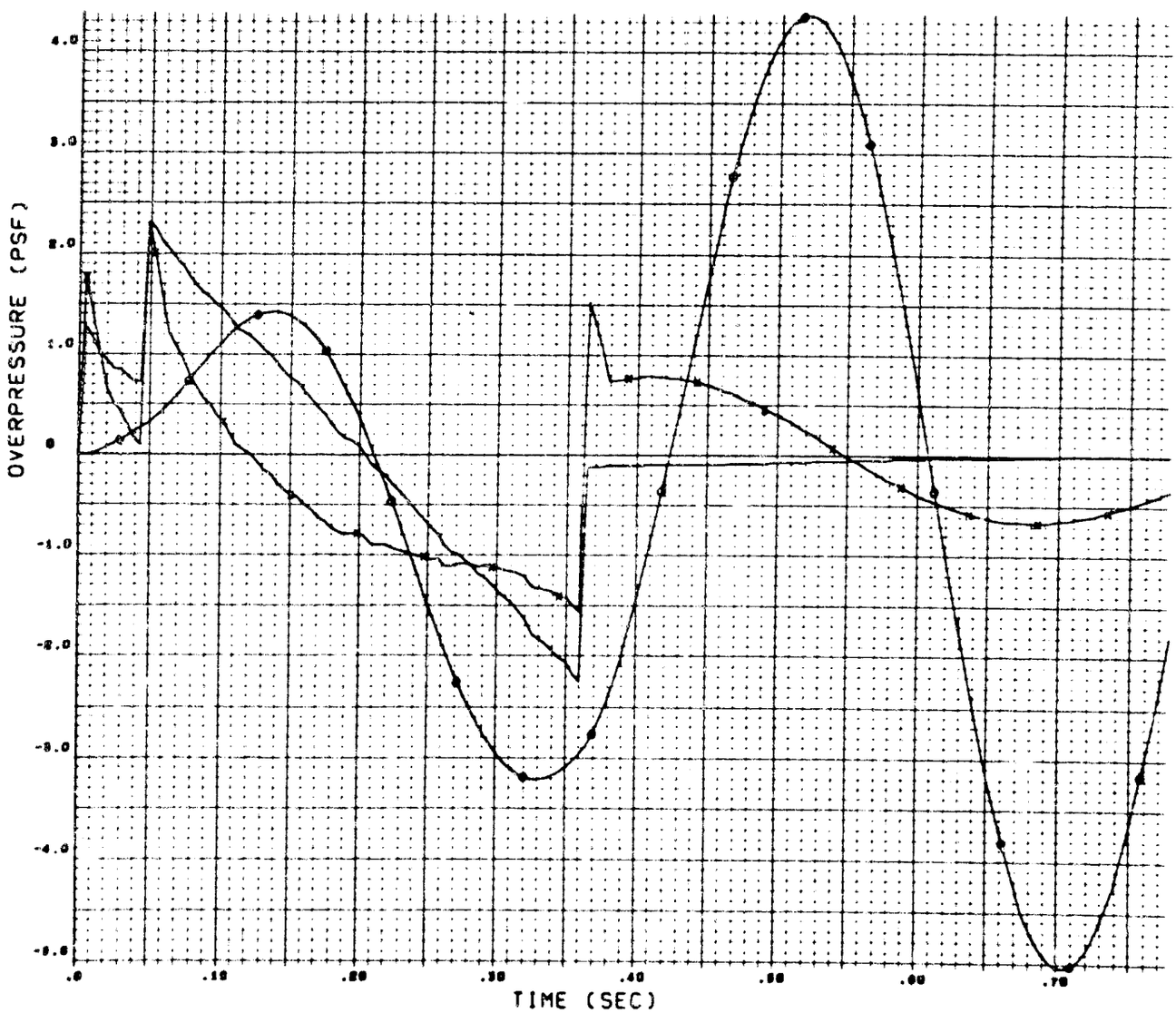

FAR FIELD THEORY
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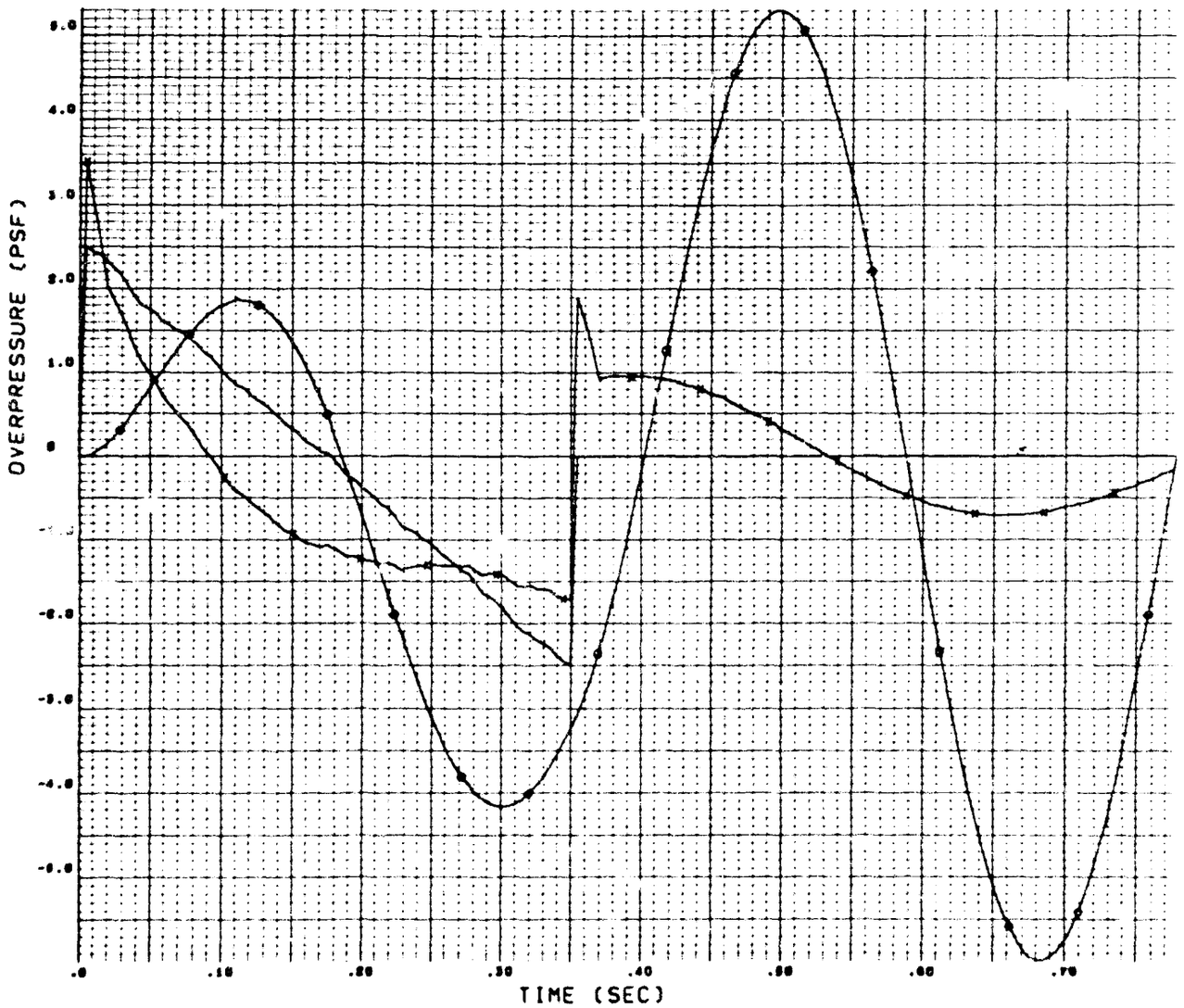

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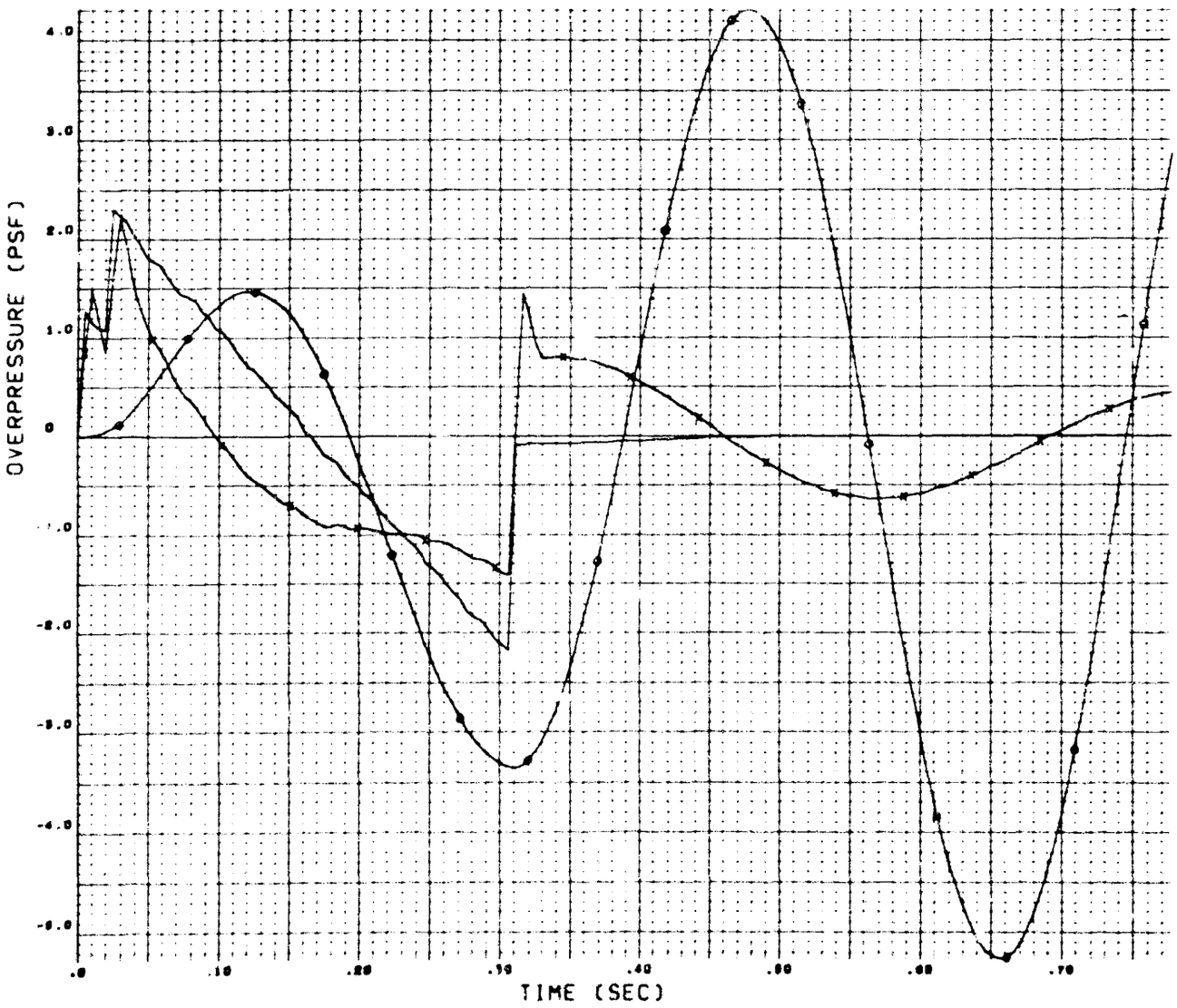

FAR FIELD THEORY
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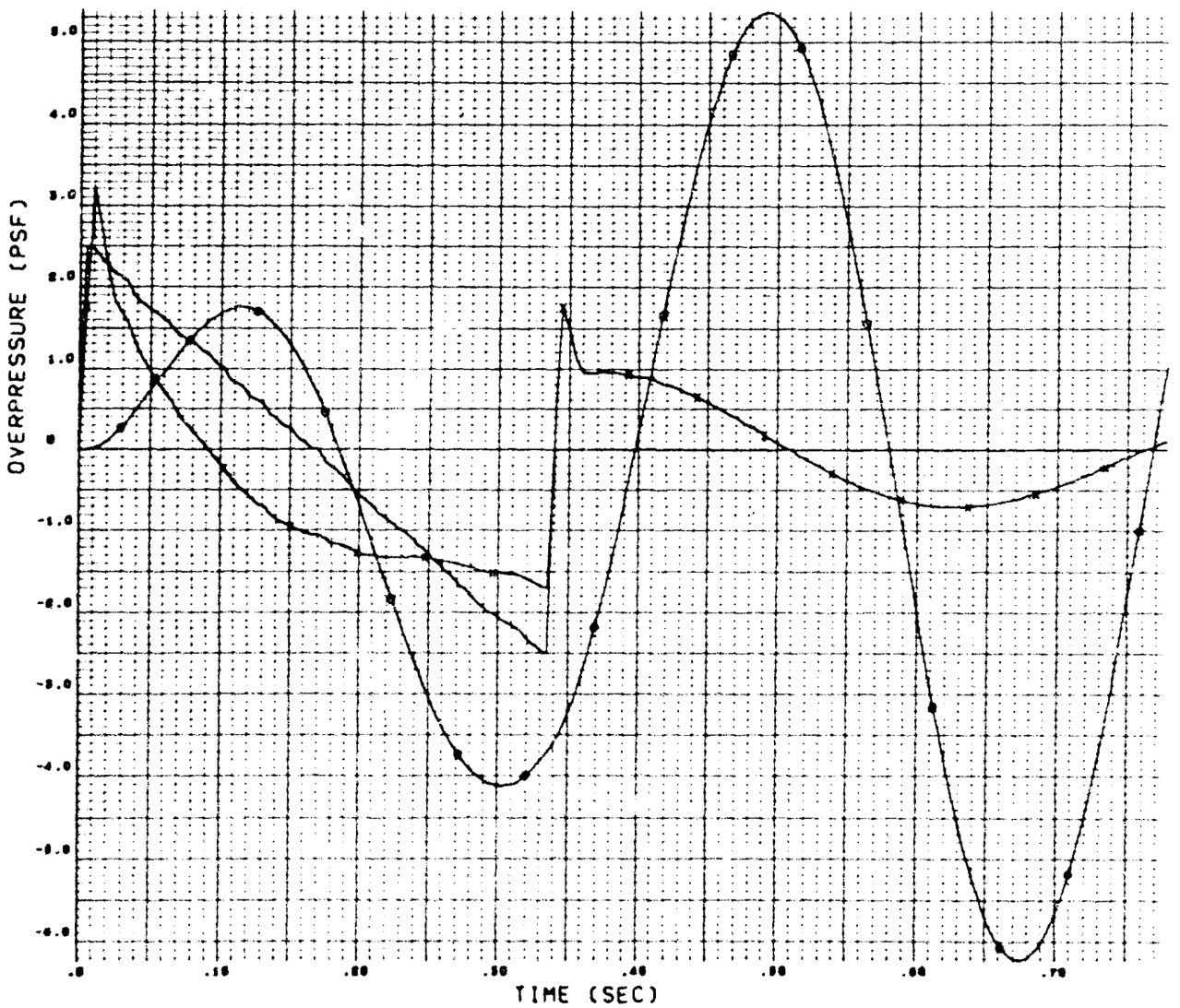

NEAR FIELD THEORY
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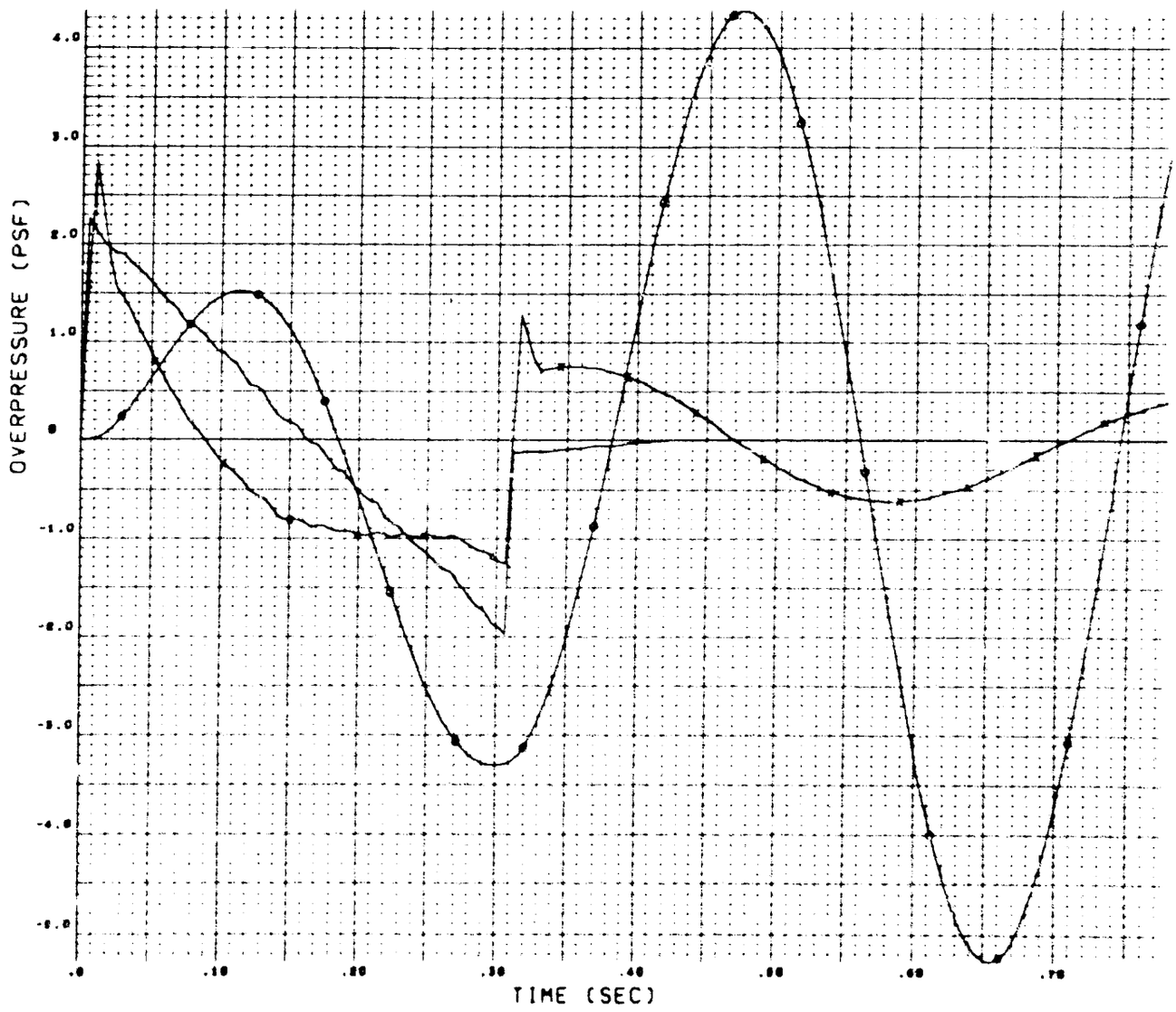

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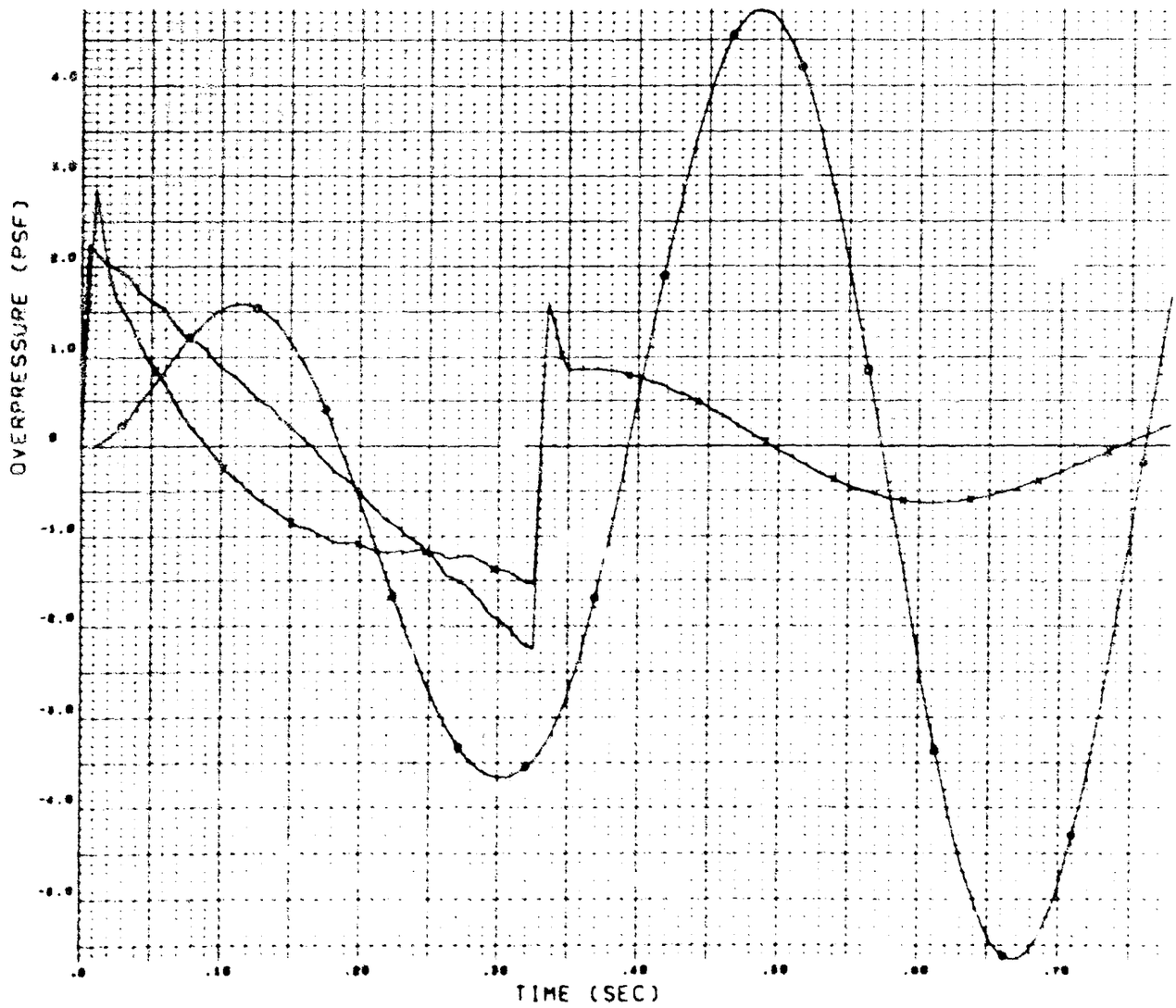

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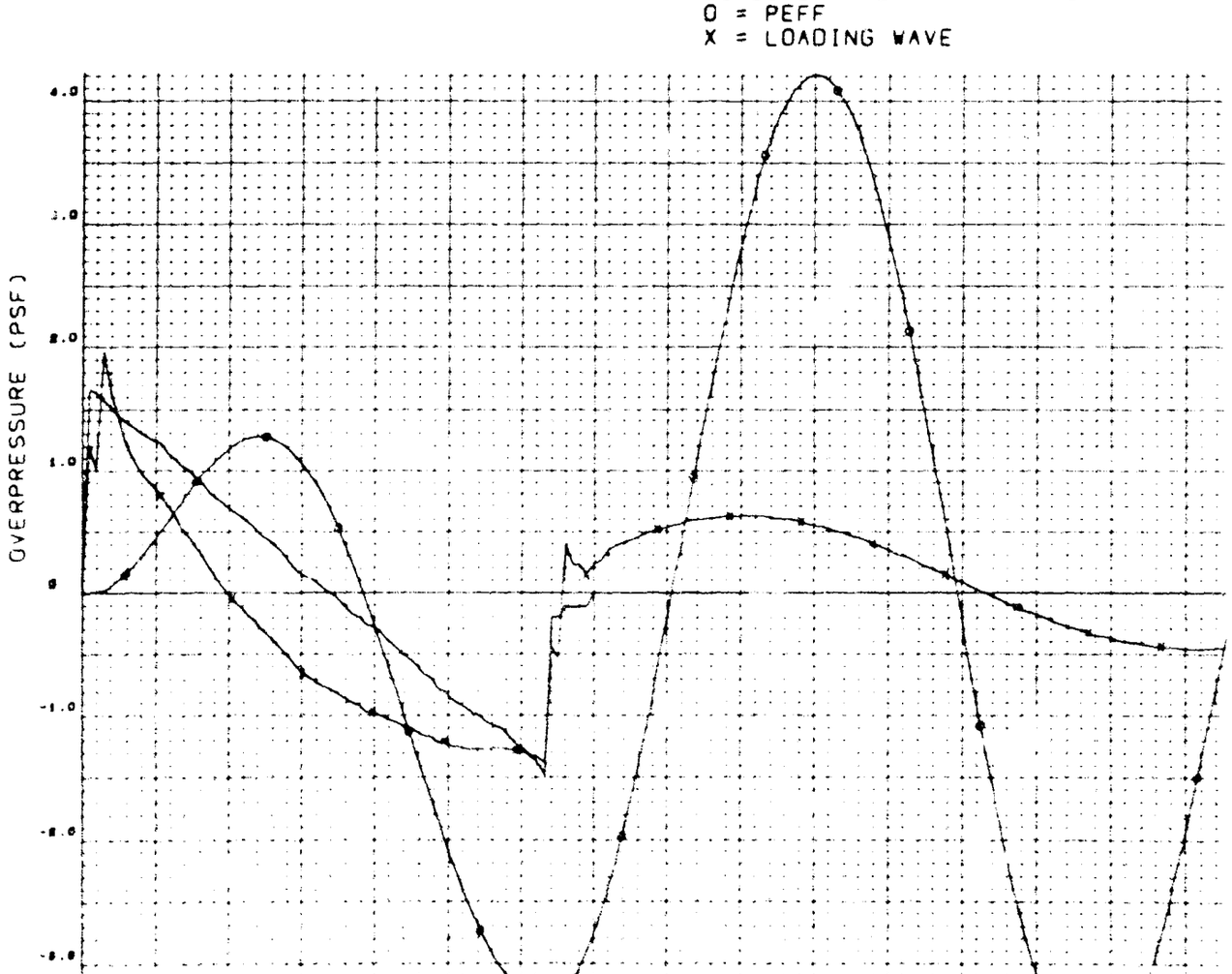

FAR FIELD THEORY
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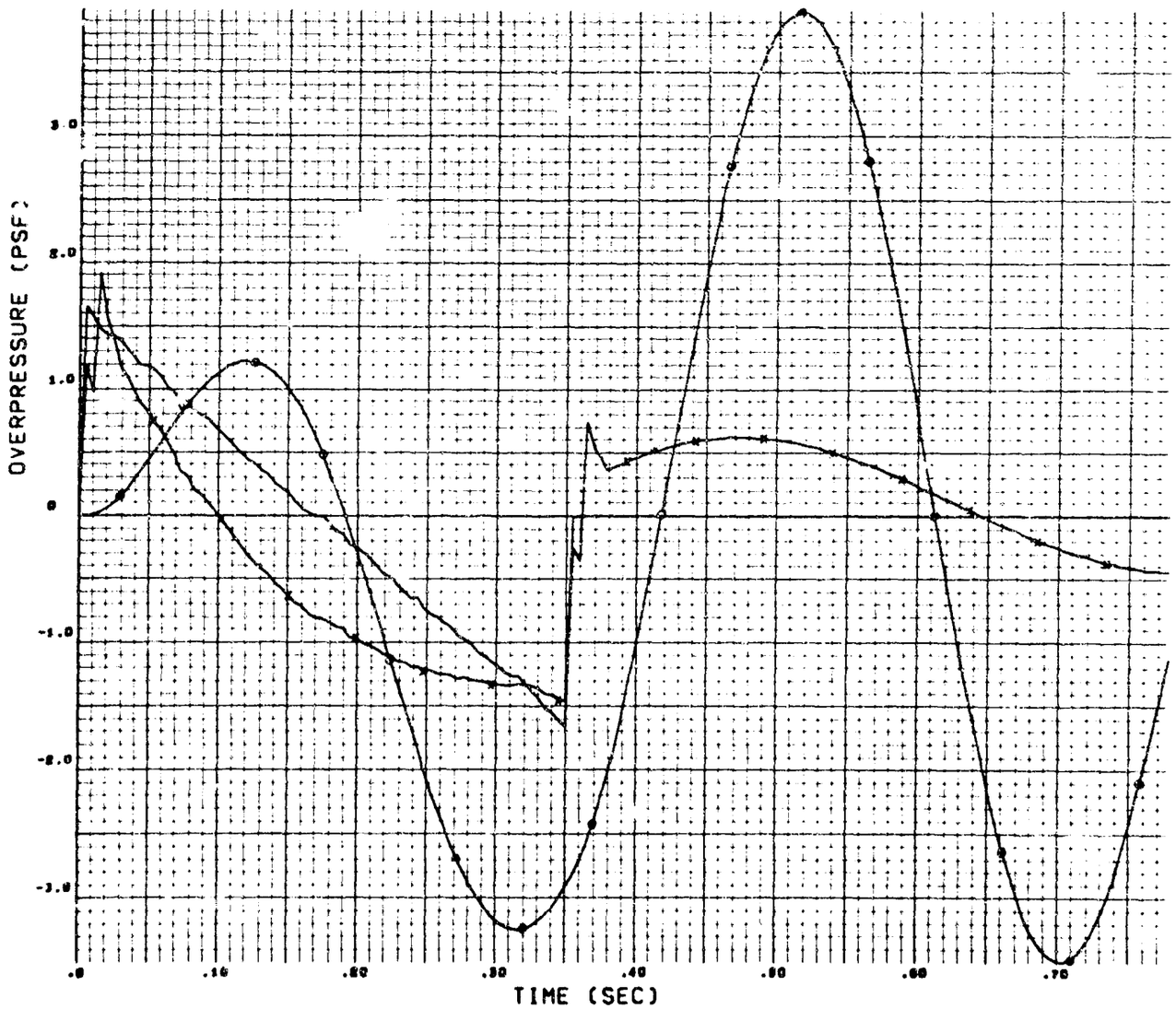

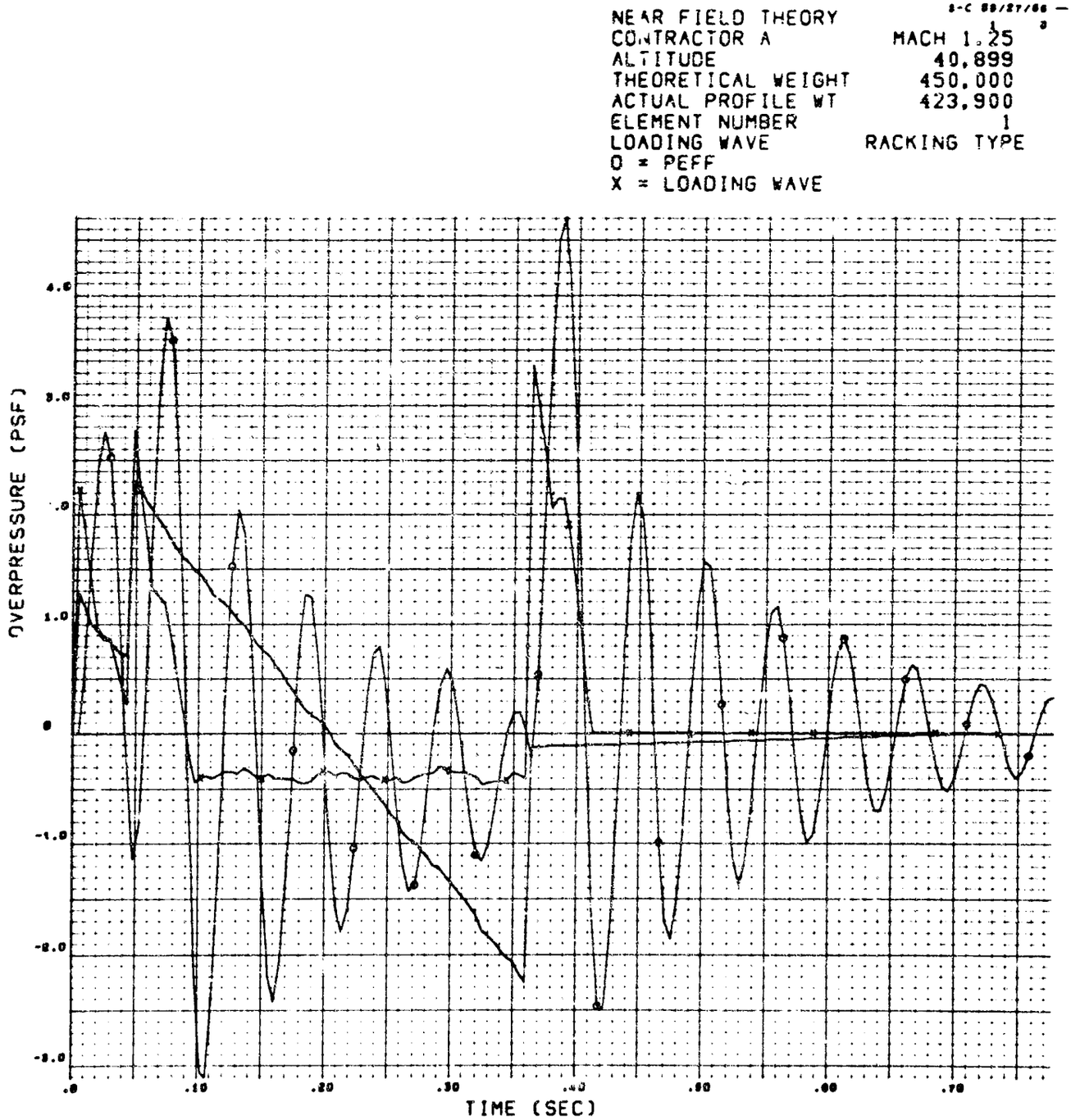
NEAR FIELD THEORY
CONTRACTOR A
MACH 1.25
ALTITUDE
40,899
THEORETICAL WEIGHT
450,000
ACTUAL PROFILE WT
423,900
ELEMENT NUMBER
1
LOADING WAVE
RACKING TYPE
O = PEFF
X = LOADING WAVE
OVERPRESSURE (PSF)
TIME (SEC)

FAR FIELD THEORY

CONTRACTOR A	MACH 1.25
ALTITUDE	40,899
THEORETICAL WEIGHT	450,000
ACTUAL PROFILE WT	423,900
ELEMENT NUMBER	1
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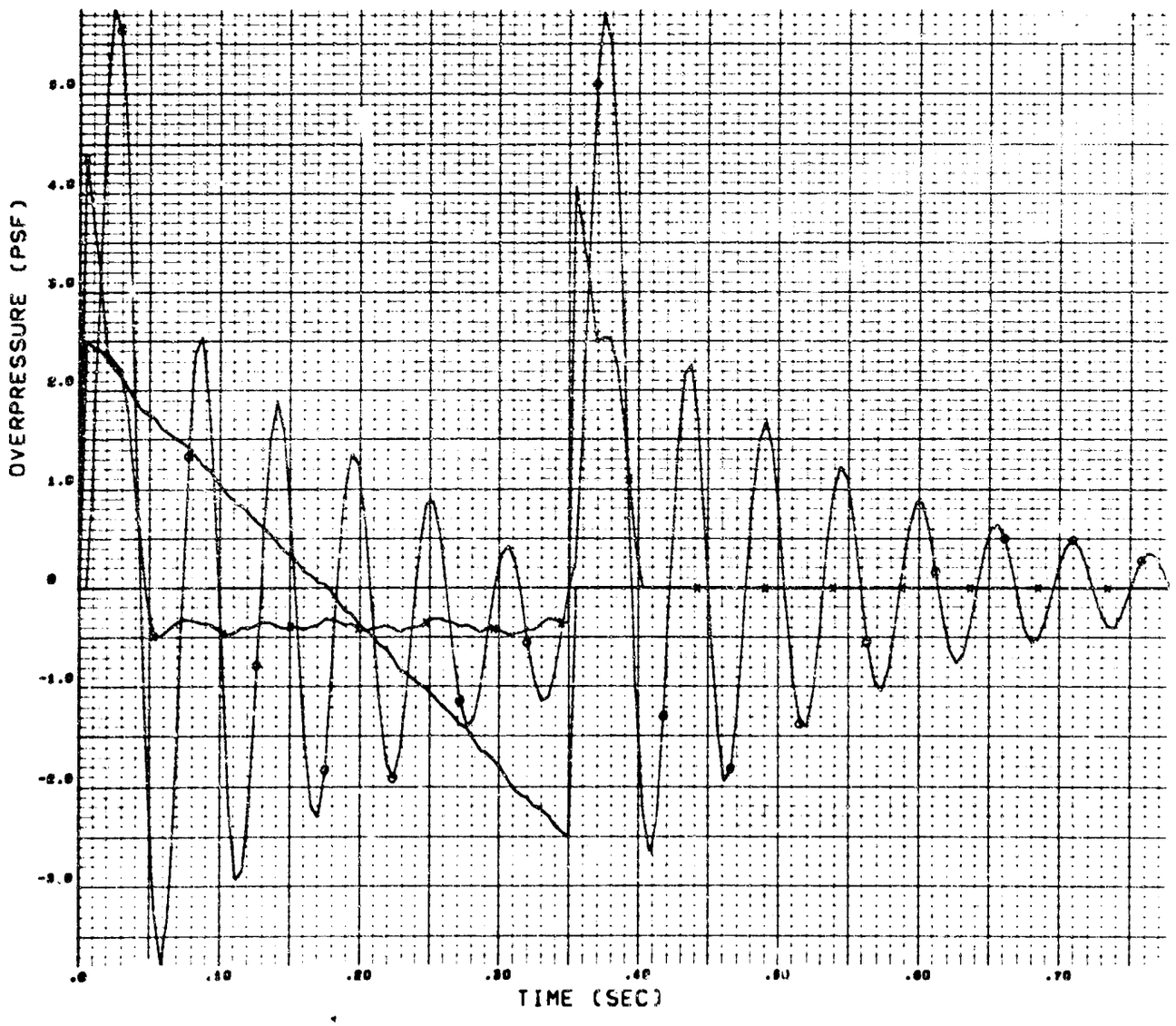

NEAR FIELD THEORY
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ACTUAL PROFILE WT — 419,700
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LOADING WAVE — RACKING TYPE
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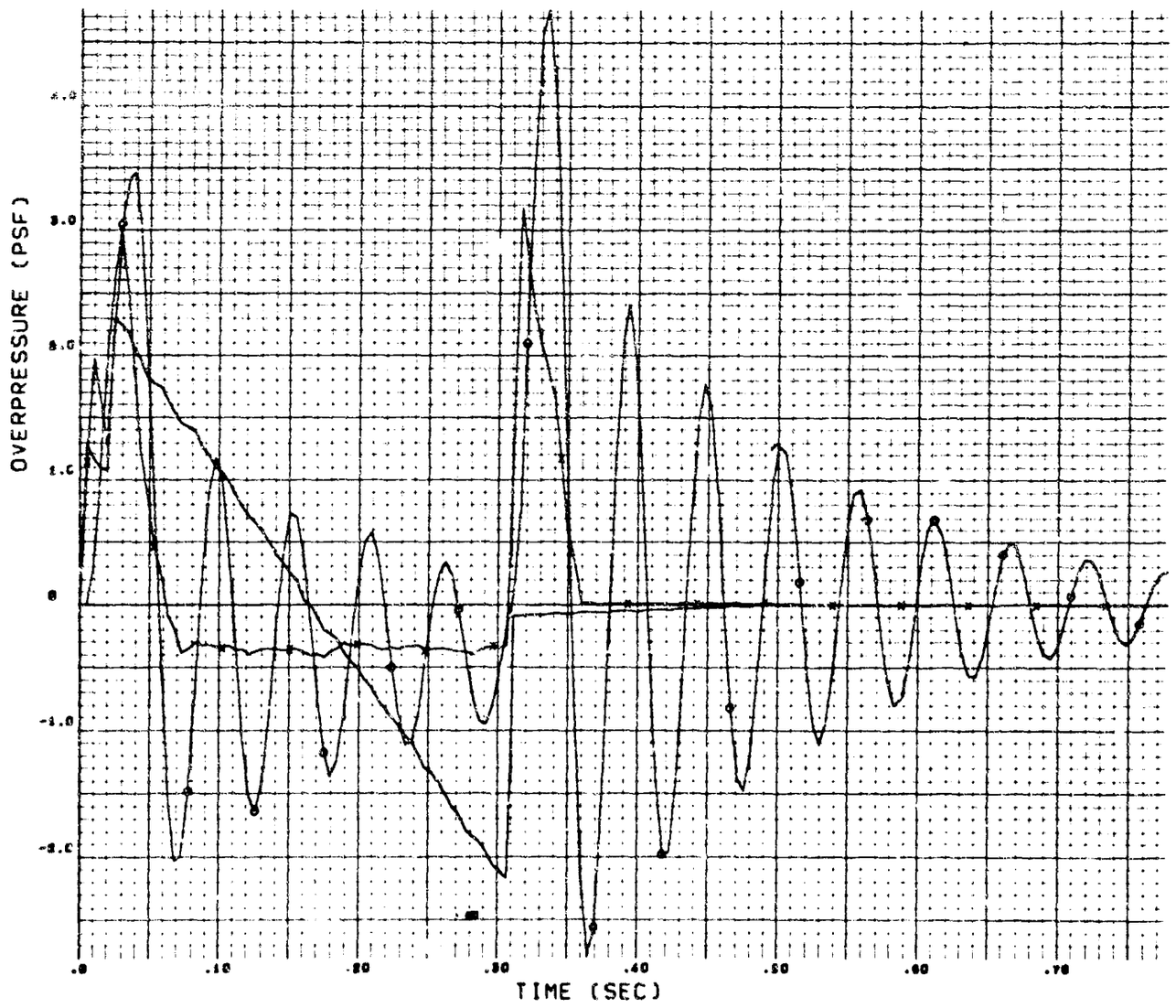

FAR FIELD THEORY
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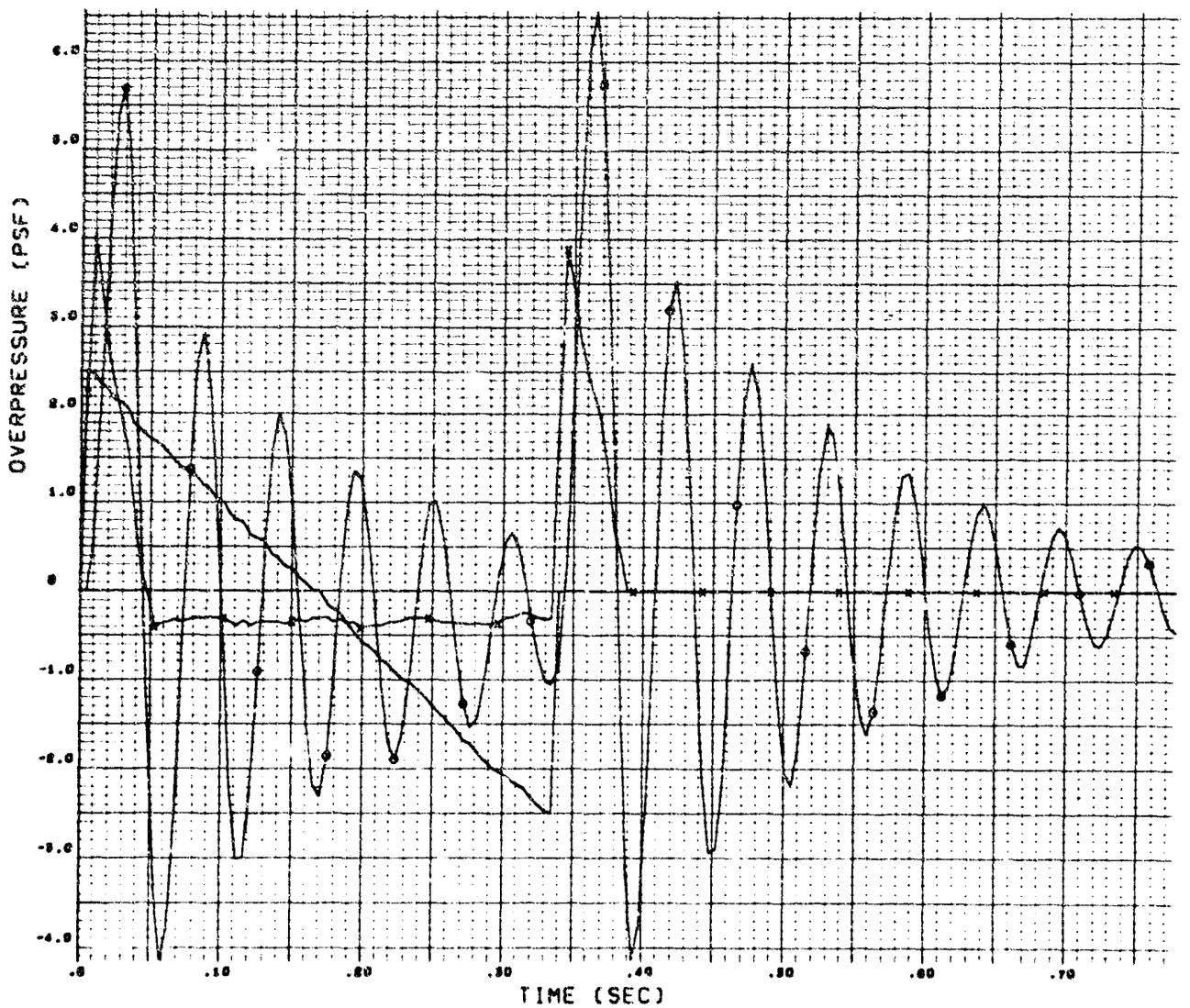

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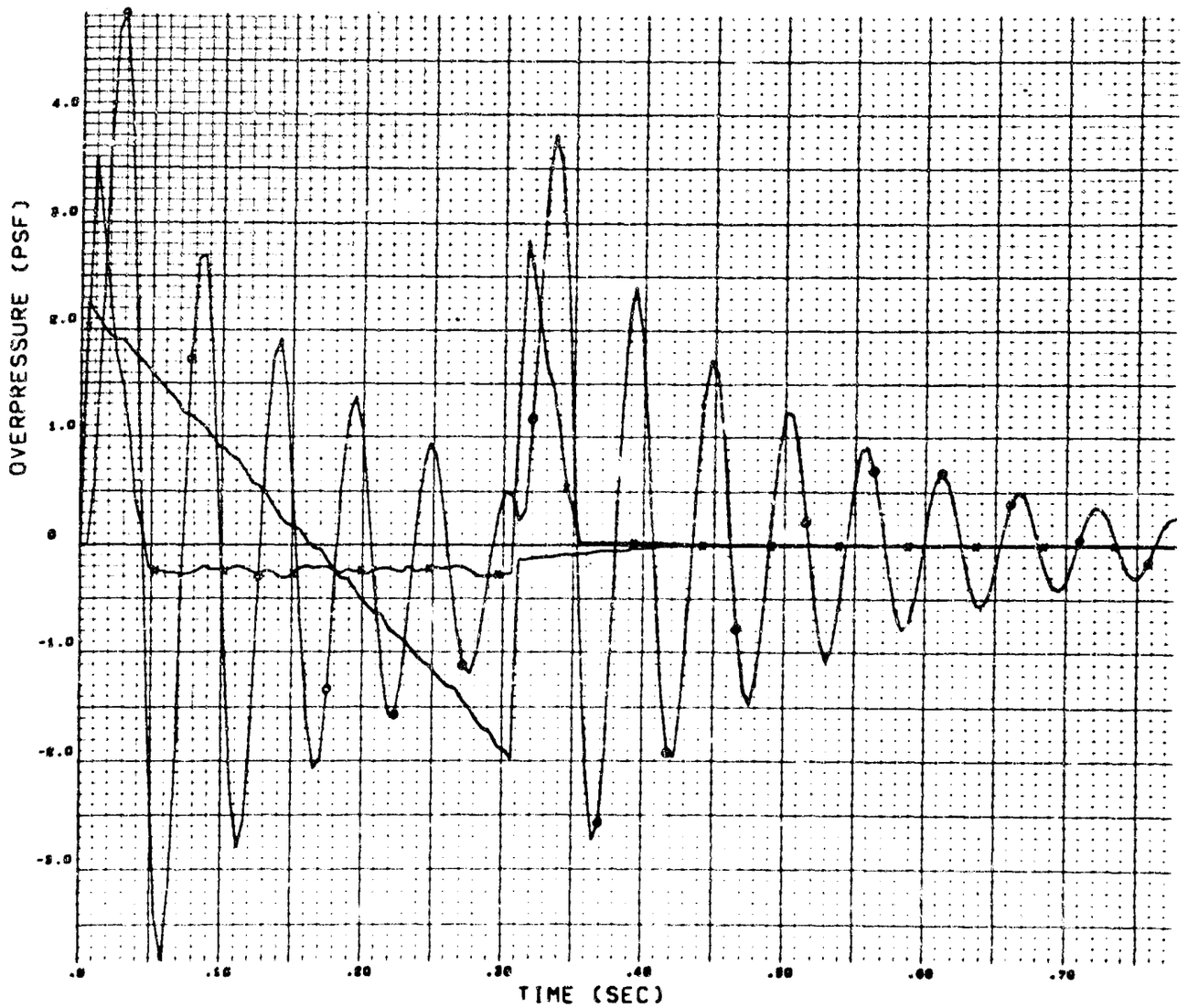

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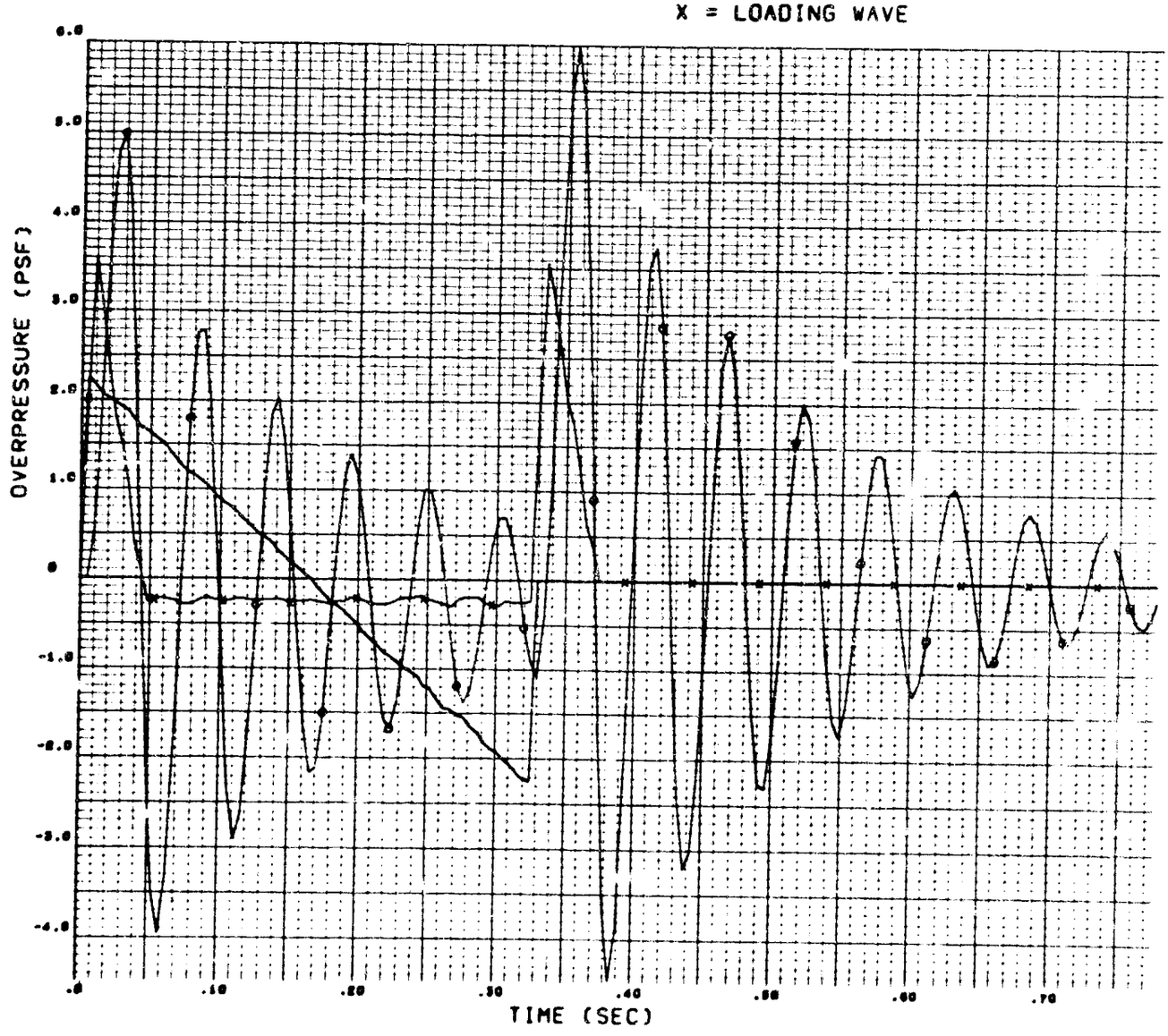
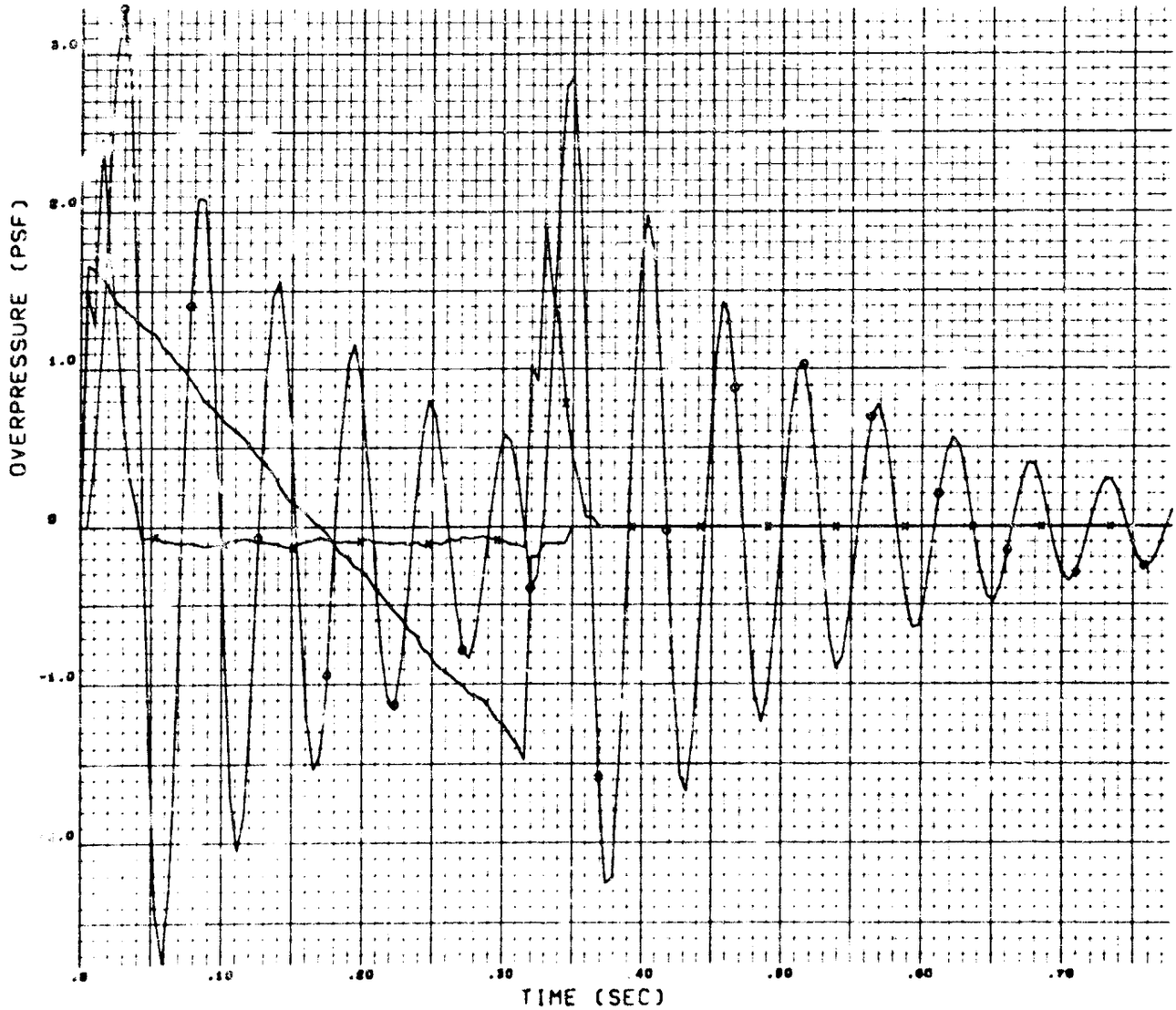
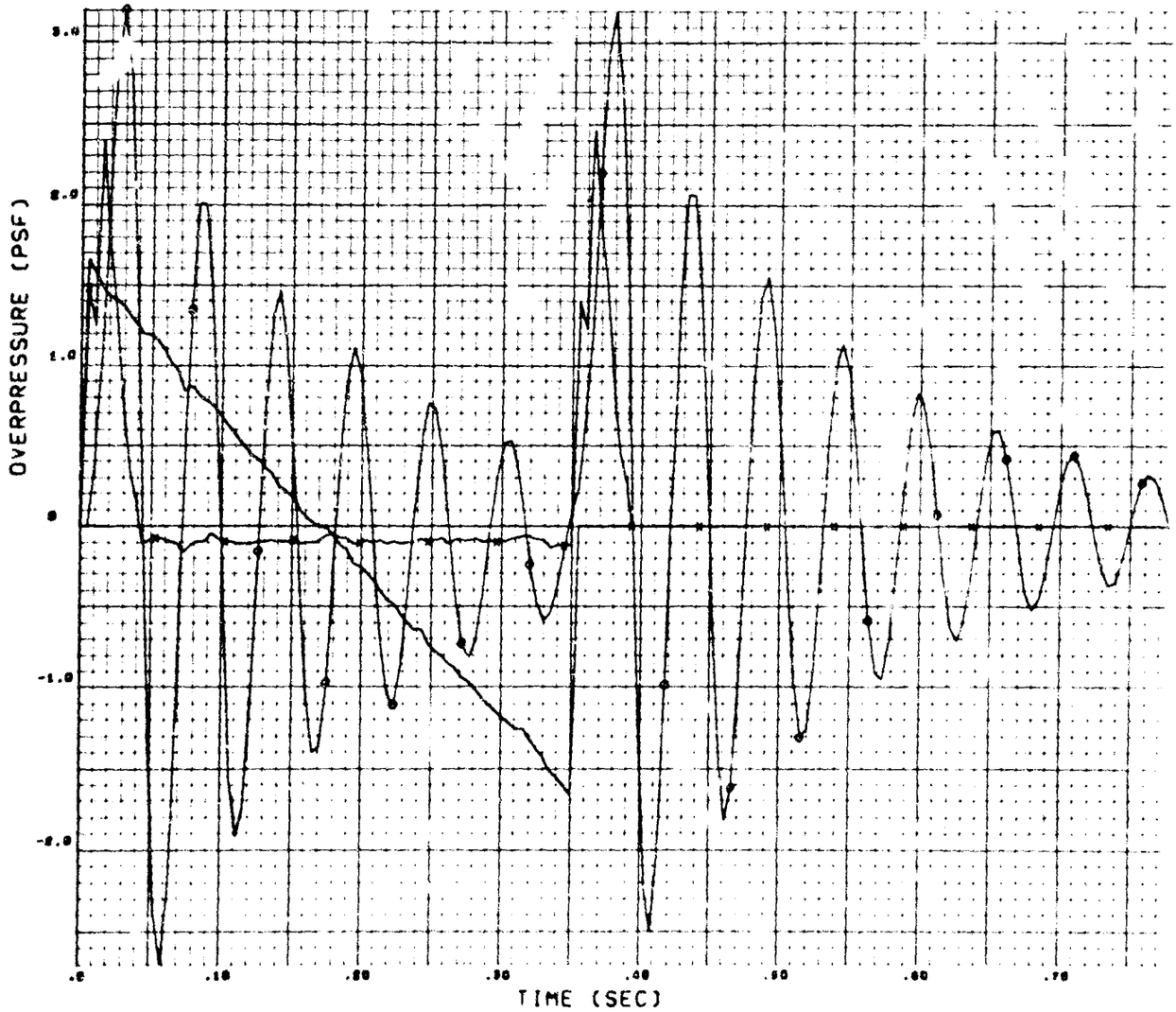


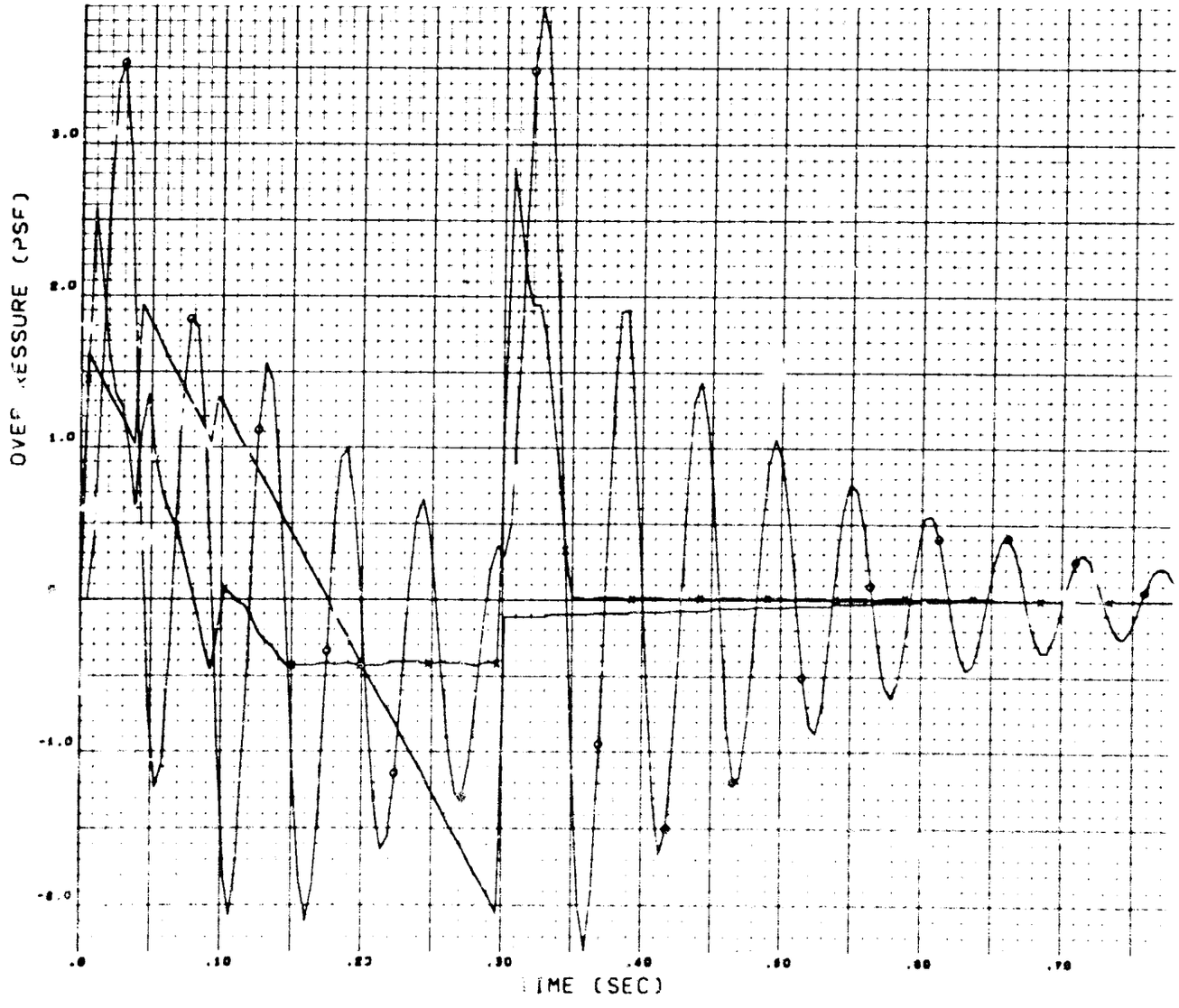
NEAR FIELD THEORY
CONTRACTOR A — MACH 2.70
ALTITUDE — 65,000
THEORETICAL WEIGHT — 450,000
ACTUAL PROFILE WT — 375,000
ELEMENT NUMBER — 1
LOADING WAVE — RACKING TYPE
O = PEFF
X = LOADING WAVE



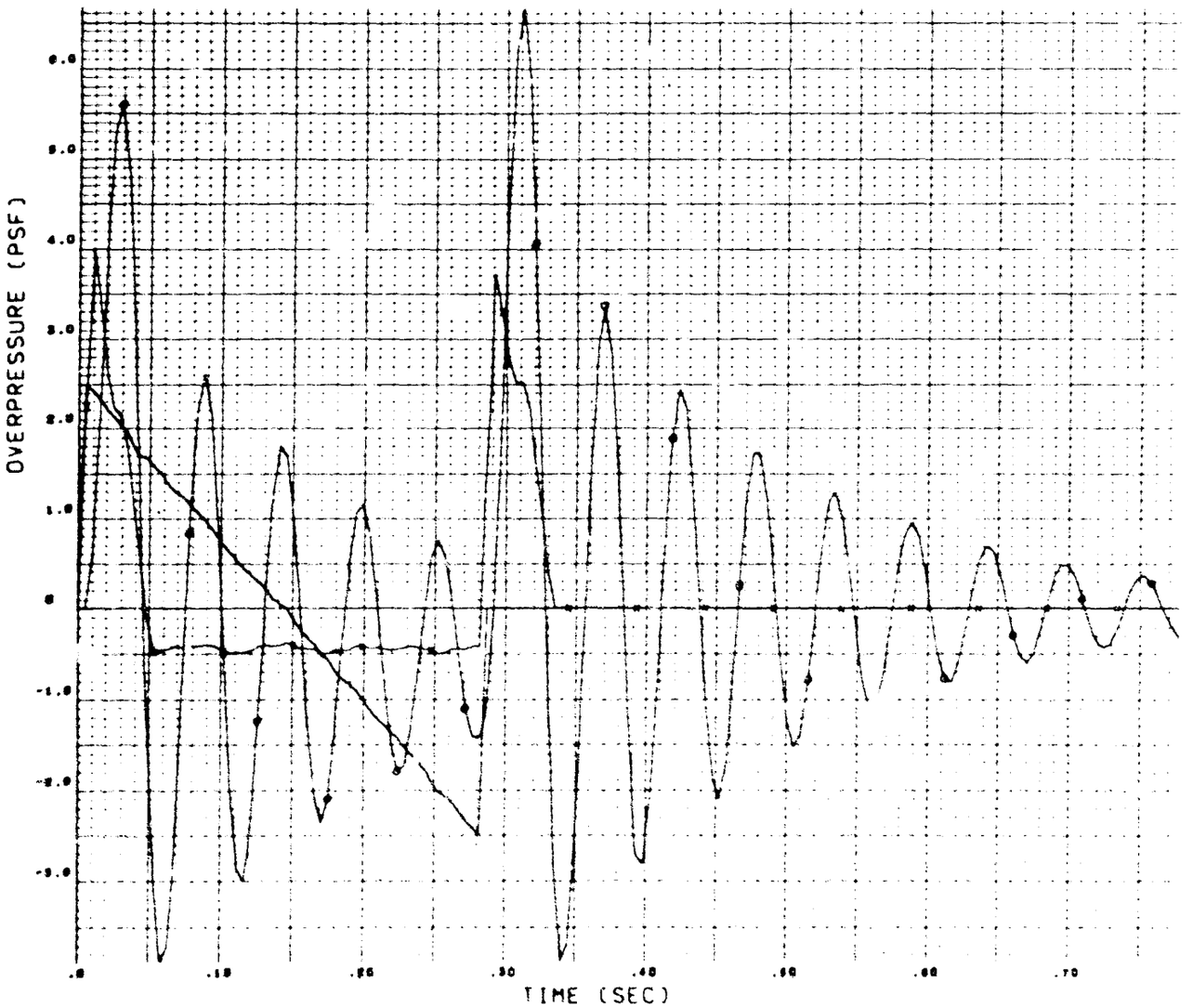
FAR FIELD THEORY
CONTRACTOR A M CH .70
ALTITUDE 8[illegible],000
THEORETICAL WEIGHT 450,0[illegible]0
ACTUAL PROFILE WT 375,000
ELEMENT NUMBER
LOADING WAVE RACKING TY
O = PEFF
X = LOADING WAVE



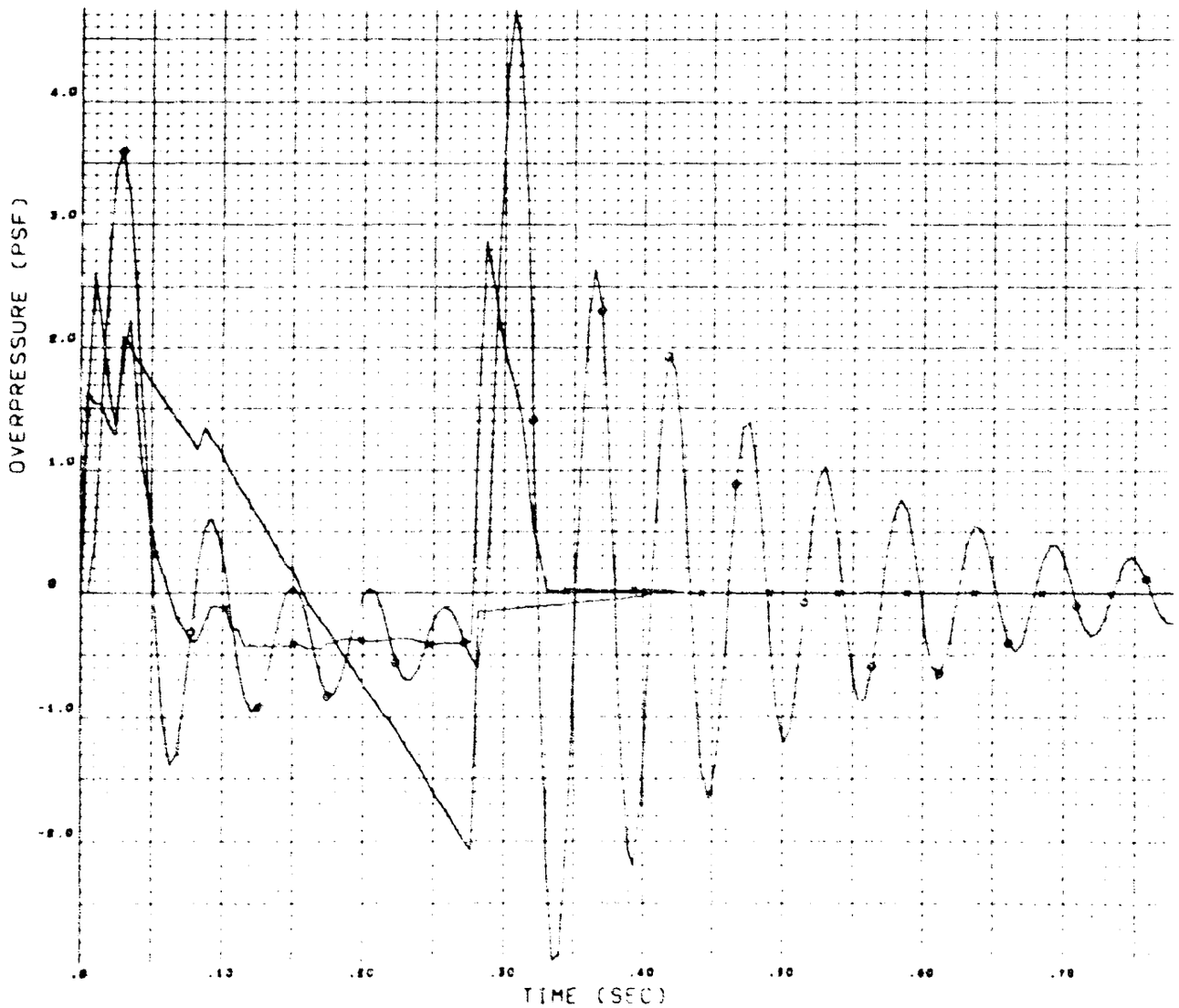
NEAR FIELD THEORY
CONTRACTOR B — MACH 1.3
ALTITUDE — 38,000
THEORETICAL WEIGHT — 420,000
ACTUAL PROFILE WT. — 396,000
ELEMENT NUMBER — 1
LOADING WAVE — RACKING TYPE
O = PEFF
X = LOADING WAVE



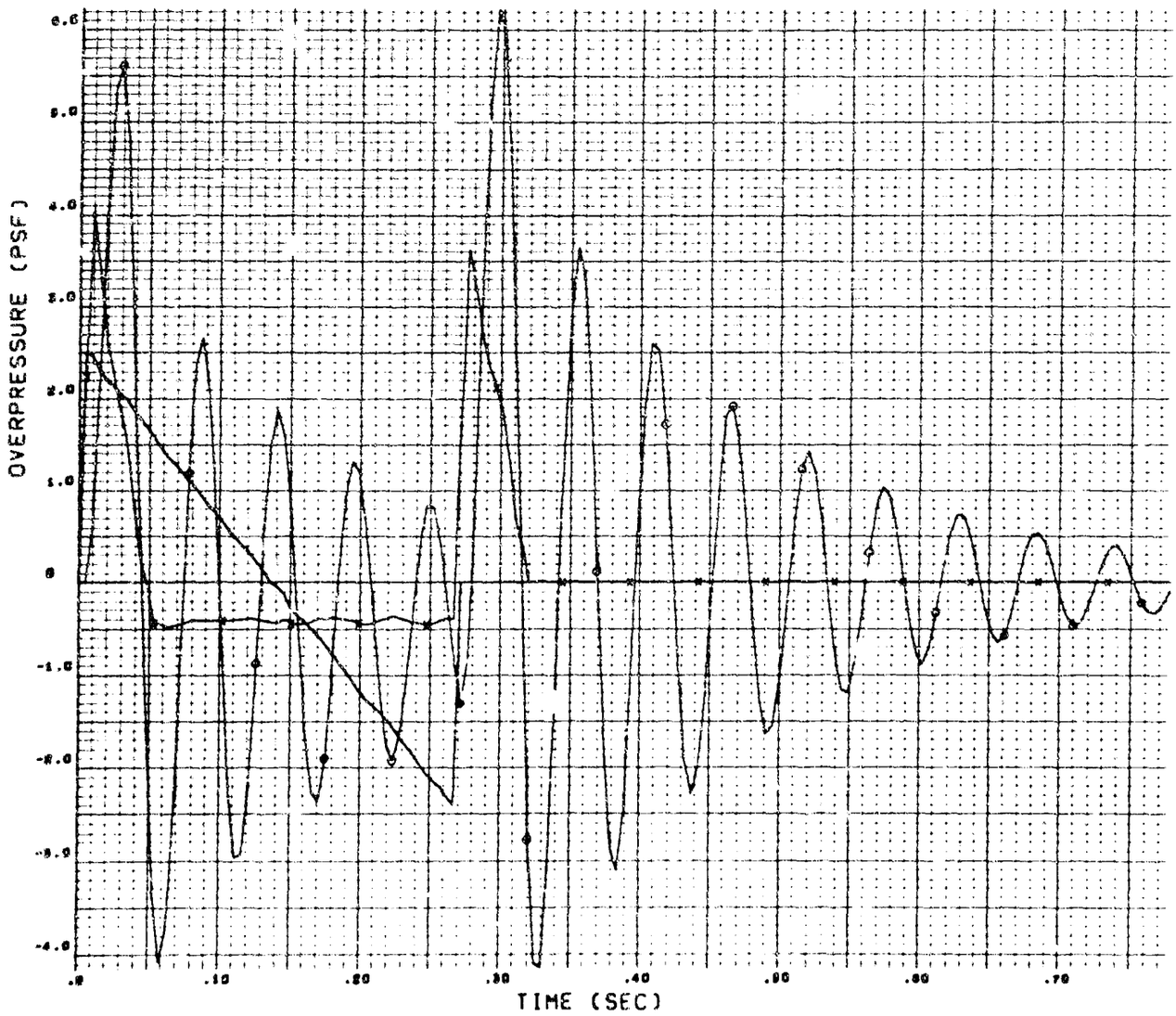
FAR FIELD THEORY
CONTRACTOR B — MACH 1.3
ALTITUDE — 38,000
THEORETICAL WEIGHT — 420,000
ACTUAL PROFILE WT. — 396,000
ELEMENT NUMBER — 1
LOADING WAVE — RACKING TYPE
O = PEFF
X = LOADING WAVE



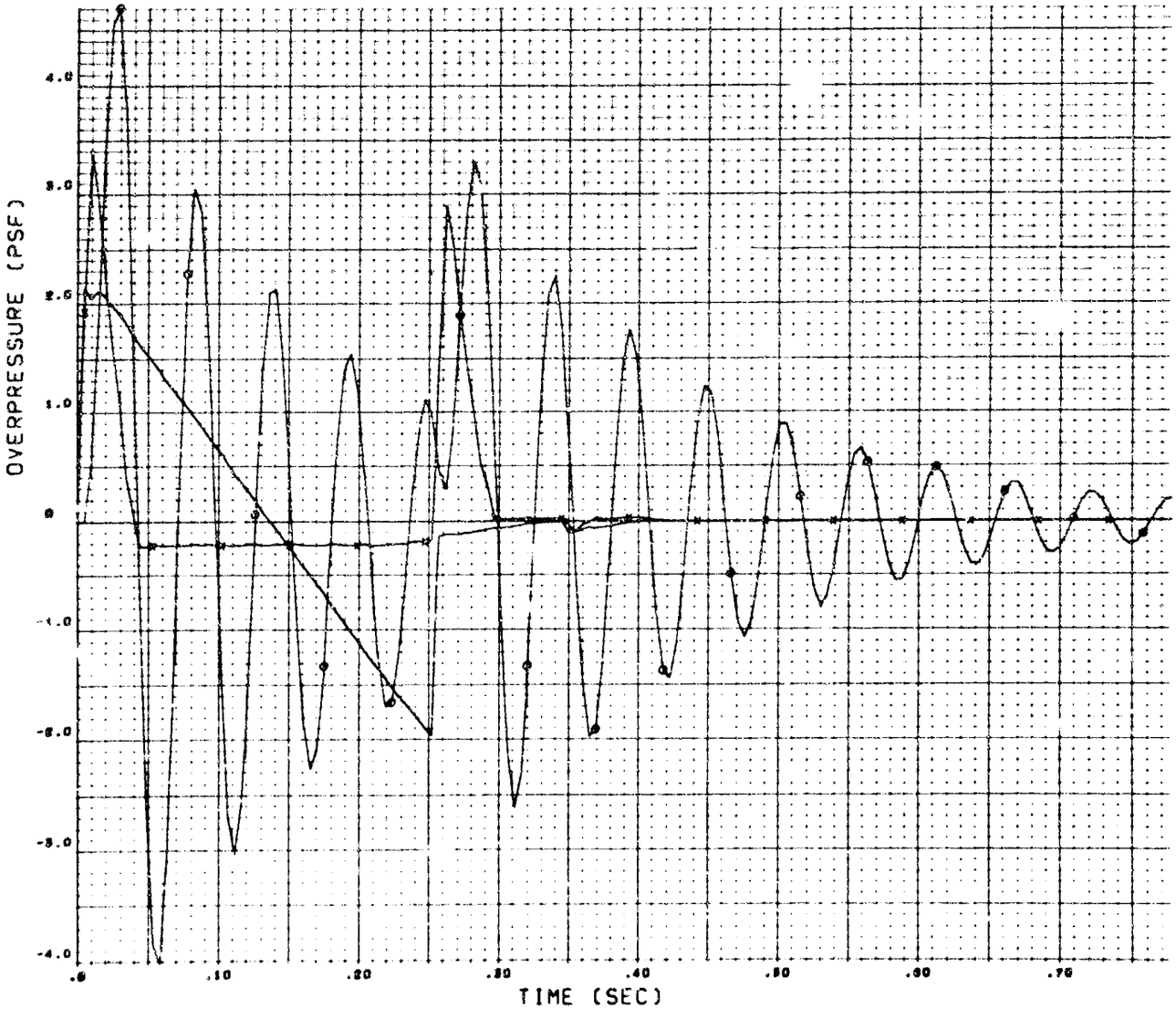
NEAR FIELD THEORY
CONTRACTOR B MACH 1.5
ALTITUDE 40,500
THEORETICAL WEIGHT 420,000
ACTUAL PROFILE WT. 333,000
ELEMENT NUMBER 1
LOADING WAVE RACKING TYPE
O = PEFF
X = LOADING WAVE



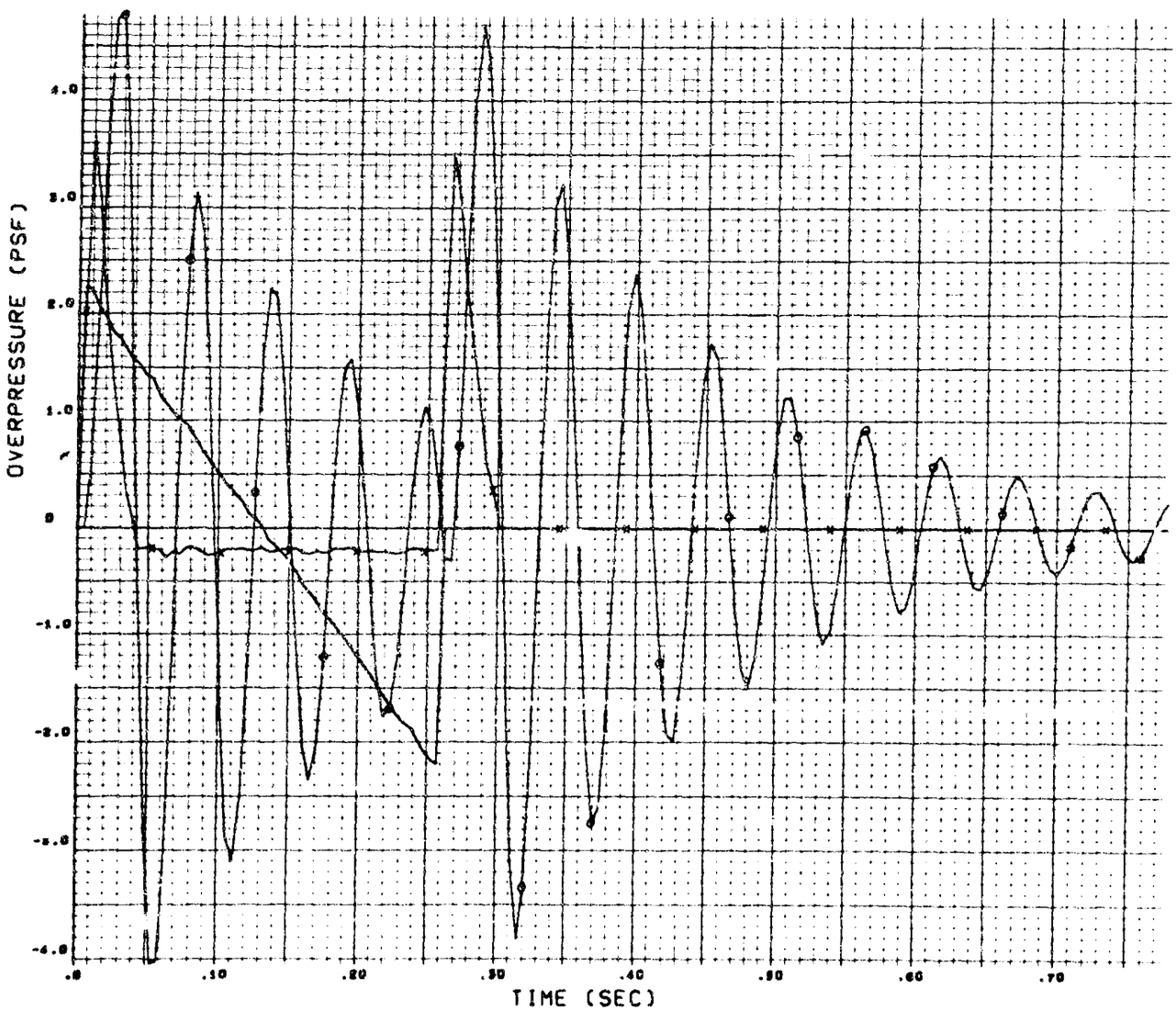
FAR FIELD THEORY
CONTRACTOR B
ALTITUDE 40,500
THEORETICAL WEIGHT 420,000
ACTUAL PROFILE WT. 393,000
ELEMENT NUMBER 1
LOADING WAVE RACKING TYPE
O = PEFF
X = LOADING WAVE



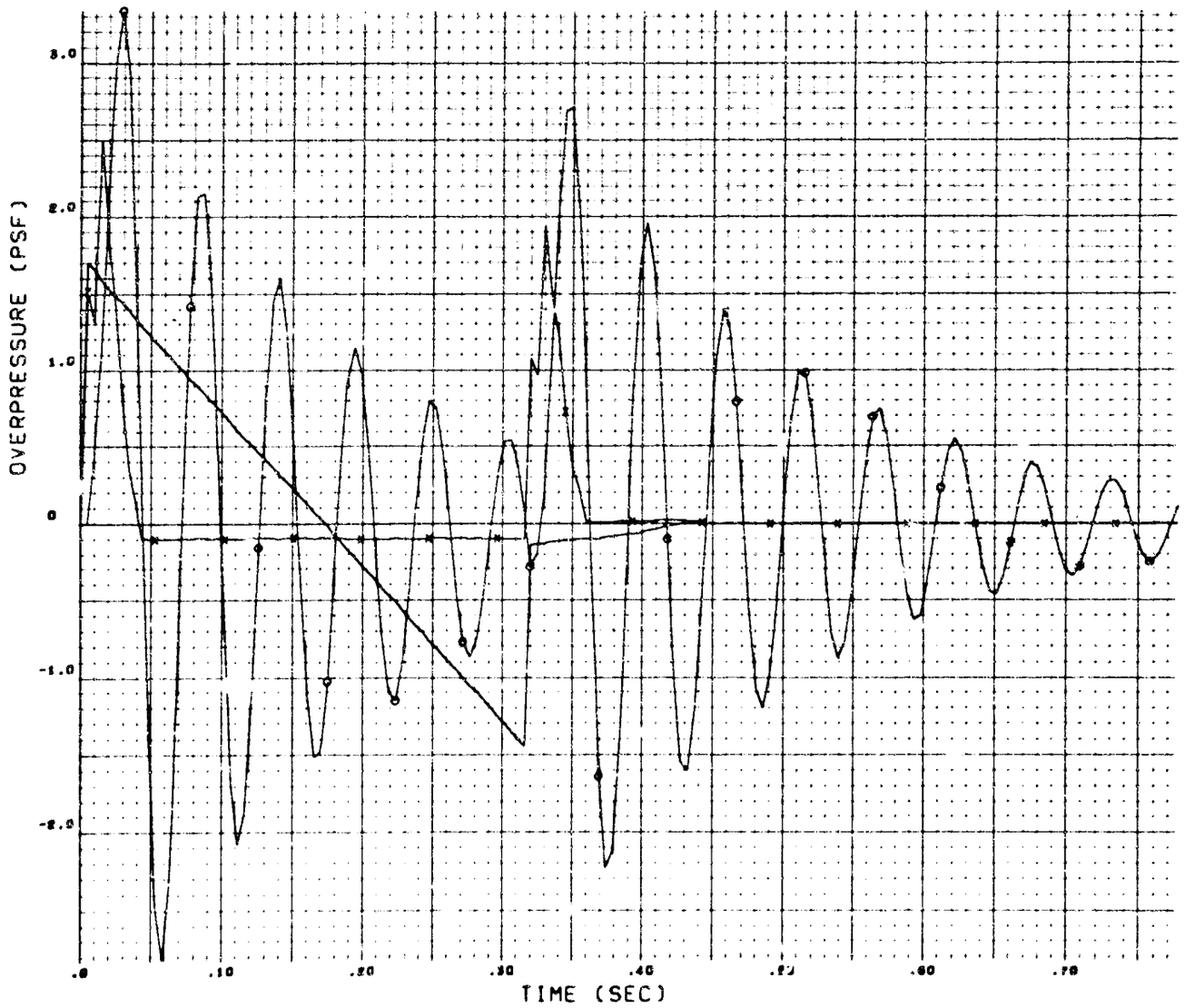
NEAR FIELD THEORY
CONTRACTOR B — MACH 2.2
ALTITUDE — 45,000
THEORETICAL WEIGHT — 420,000
ACTUAL PROFILE WT. — 385,000
ELEMENT NUMBER — 1
LOADING WAVE — RACKING TYPE
O = PEFF
X = LOADING WAVE



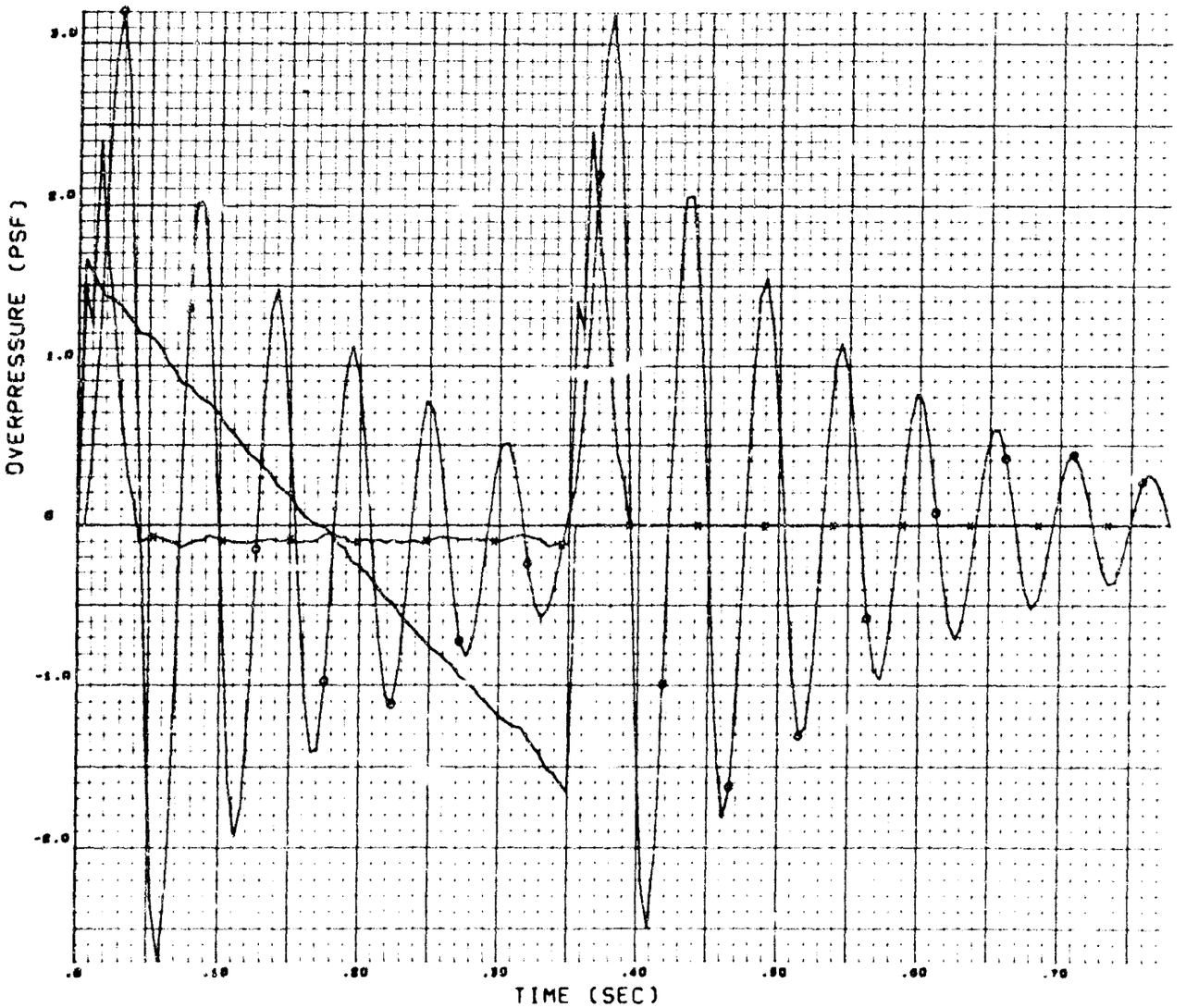
FAR FIELD THEORY
CONTRACTOR B — MACH 2.2
ALTITUDE — 45,000
THEORETICAL WEIGHT — 420,000
ACTUAL PROFILE WT. — 385,000
ELEMENT NUMBER — 1
LOADING WAVE — RACKING TYPE
O = PEFF
X = LOADING WAVE



NEAR FIELD THEORY
CONTRACTOR B MACH 2.7
ALTITUDE 59,000
THEORETICAL WEIGHT 420,000
ACTUAL PROFILE WT. 377,770
ELEMENT NUMBER 1
LOADING WAVE RACKING TYPE
O = PEFF
X = LOADING WAVE



FAR FIELD THEORY
CONTRACTOR B MACH 2.7
ALTITUDE 59,000
THEORETICAL WEIGHT 420,000
ACTUAL PROFILE WT. 377,770
ELEMENT NUMBER 1
LOADING WAVE RACKING TYPE
O = PEFF
X = LOADING WAVE



RECORDED DATA

F-104	1.5
ALTITUDE	28,000
ACTUAL PROFILE WT.	14,500
ELEMENT NUMBER	1

LOADING WAVE RACKING TYPE
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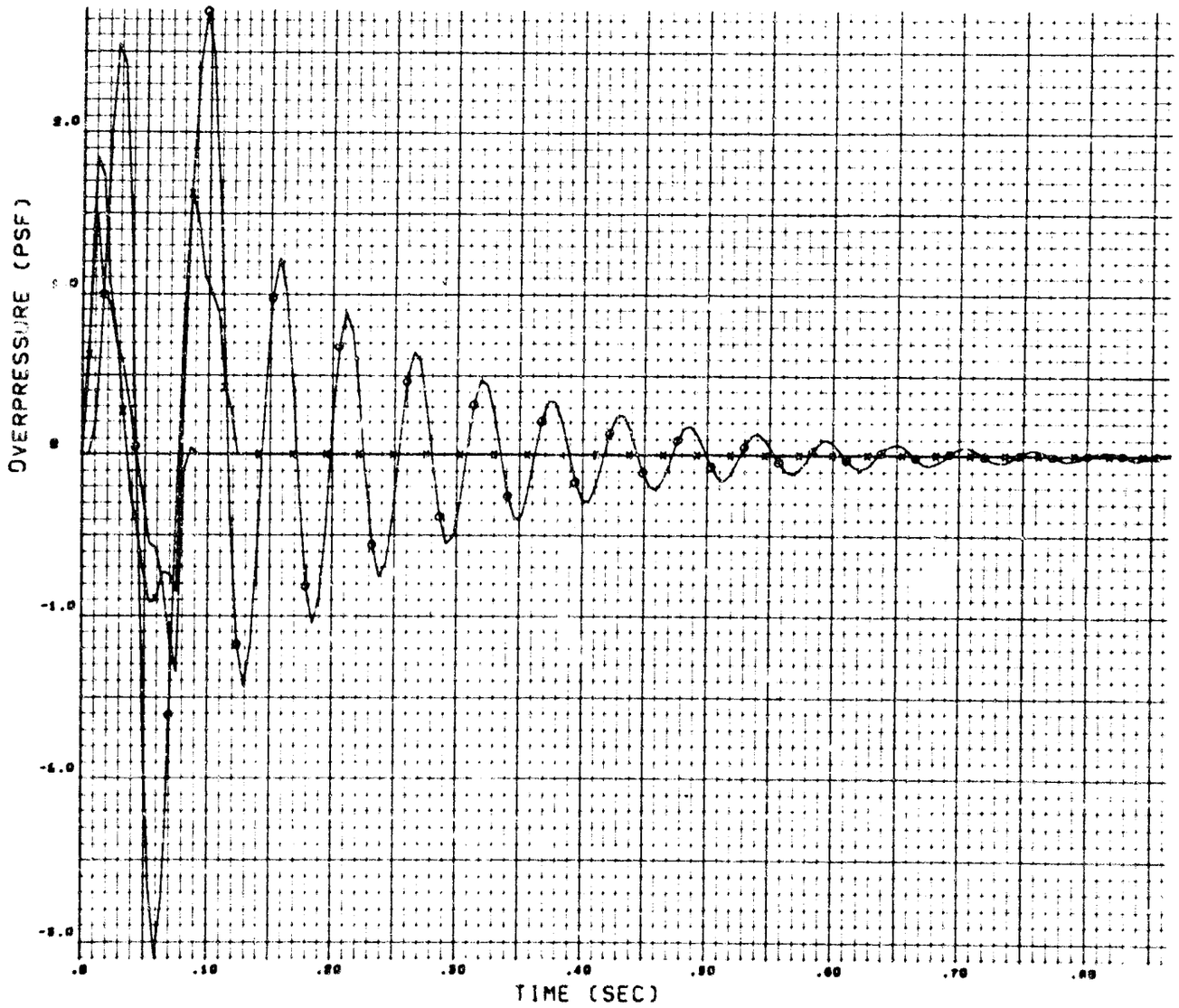
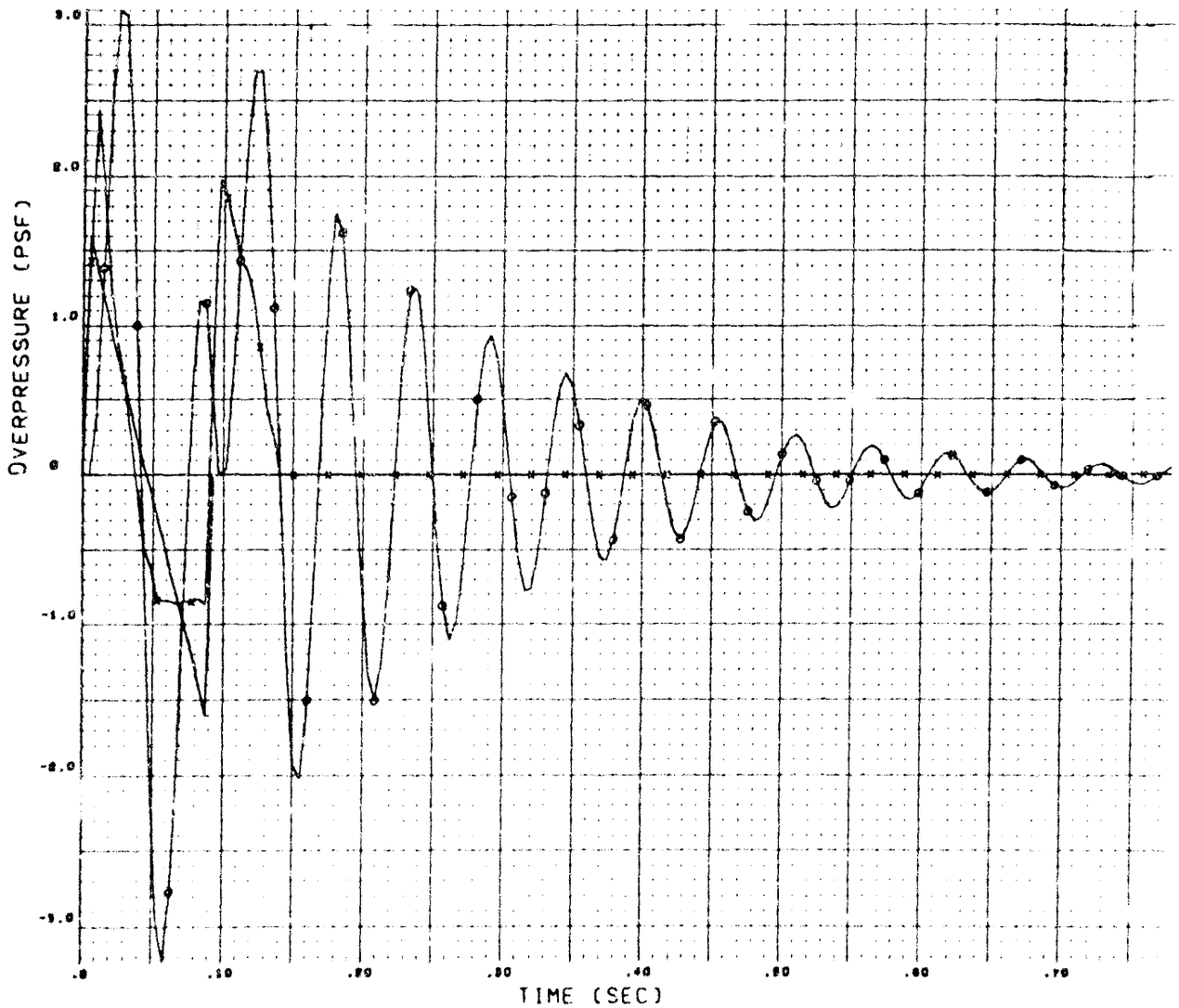
X = LOADING WAVE



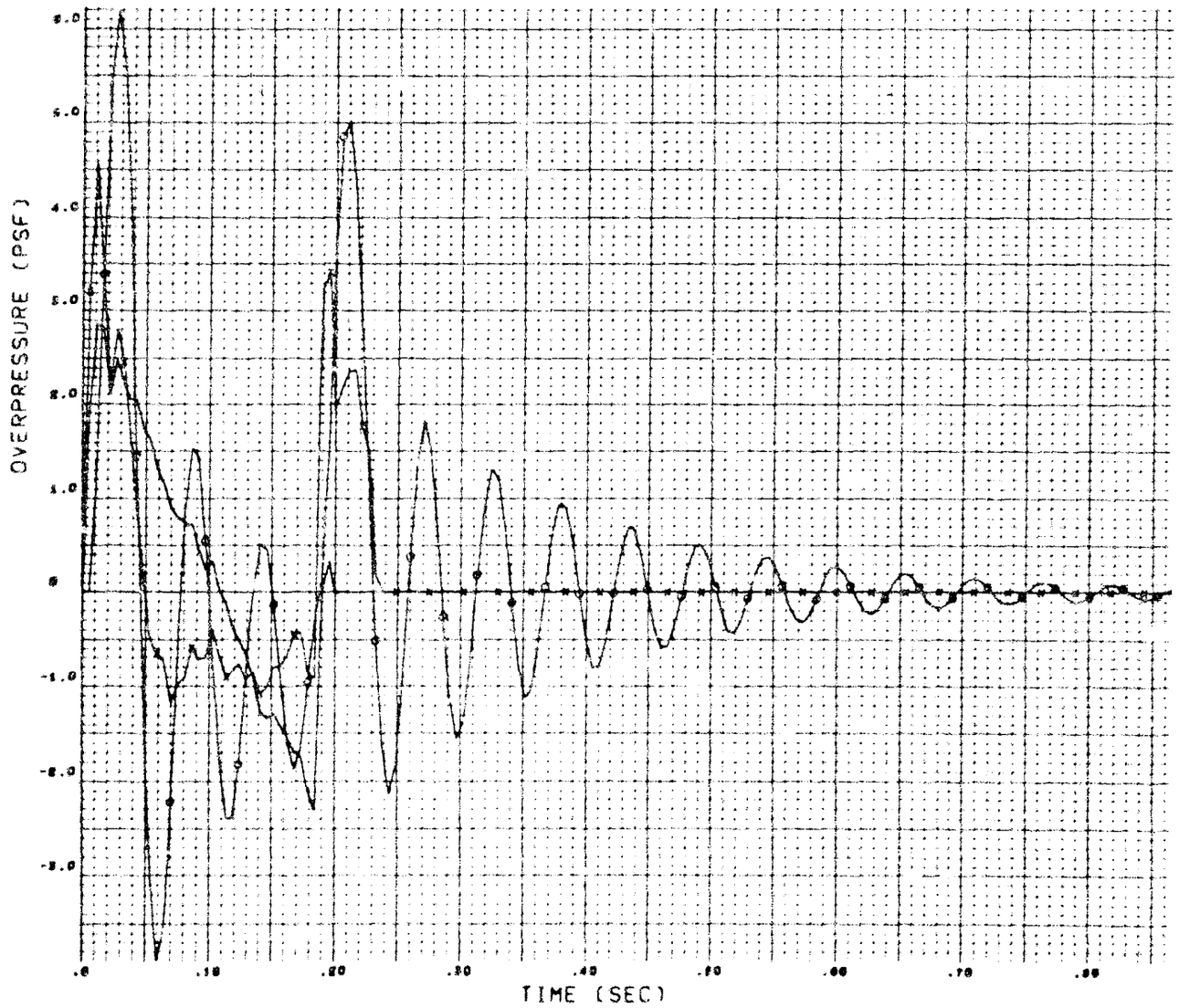
FAR FIELD THEORY
F-104 1.5
ALTIT E 28,000
ACTUA PROFILE WT. 14,500
ELEMENT NUMBER 1

LOADING WAVE RACKING TYPE
O = PEFF
X = LOADING WAVE



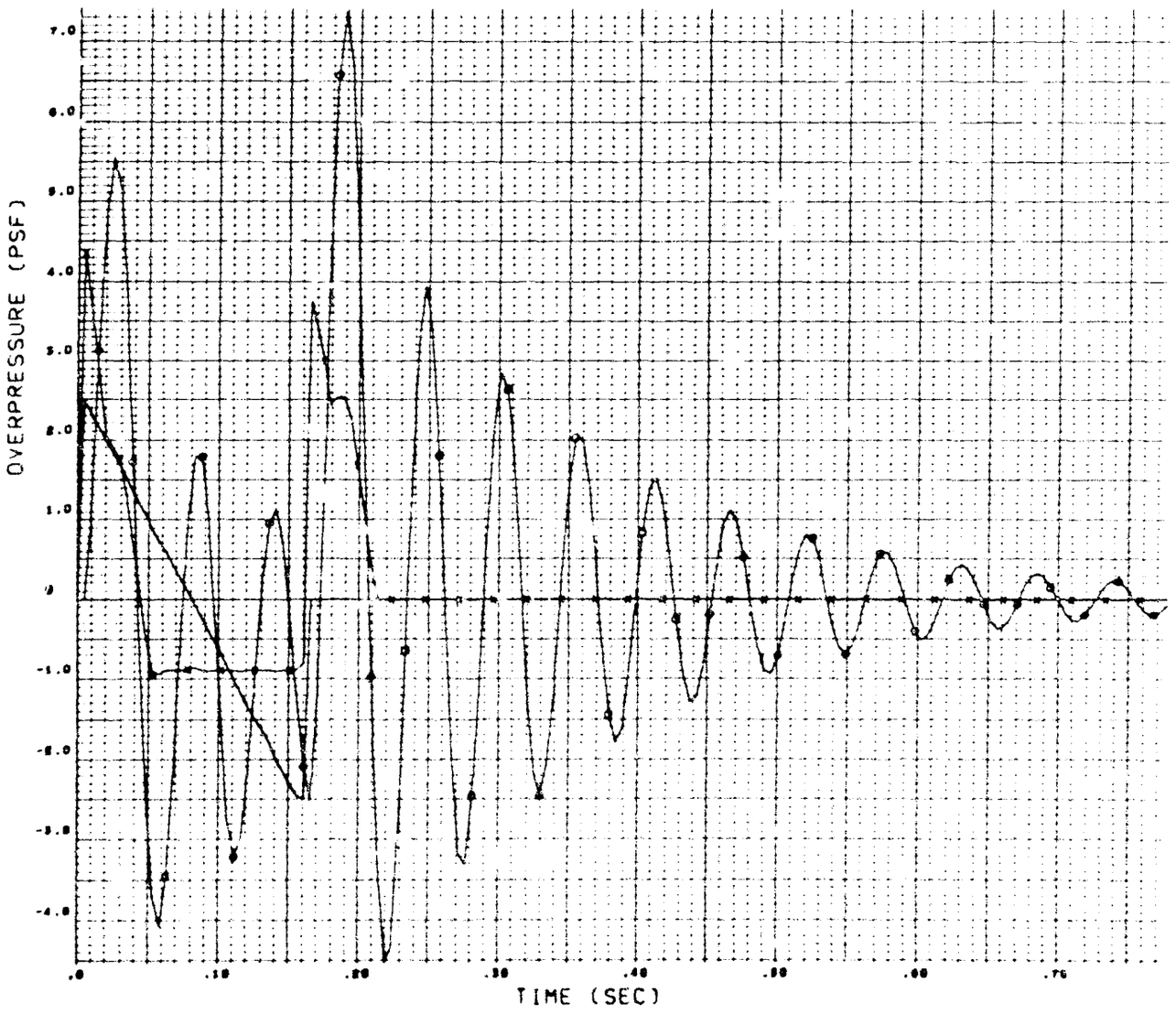
RECORDED DATA
B-58 1.22
ALTITUDE 27,000
ACTUAL PROFILE WT. 120,000
ELEMENT NUMBER 1

LOADING WAVE RACKING TYPE
O = PEFF
X = LOADING WAVE



FAR FIELD THEORY
B-58 1.22
ALTITUDE 27,000
ACTUAL PROFILE WT. 120,000
ELEMENT NUMBER 1

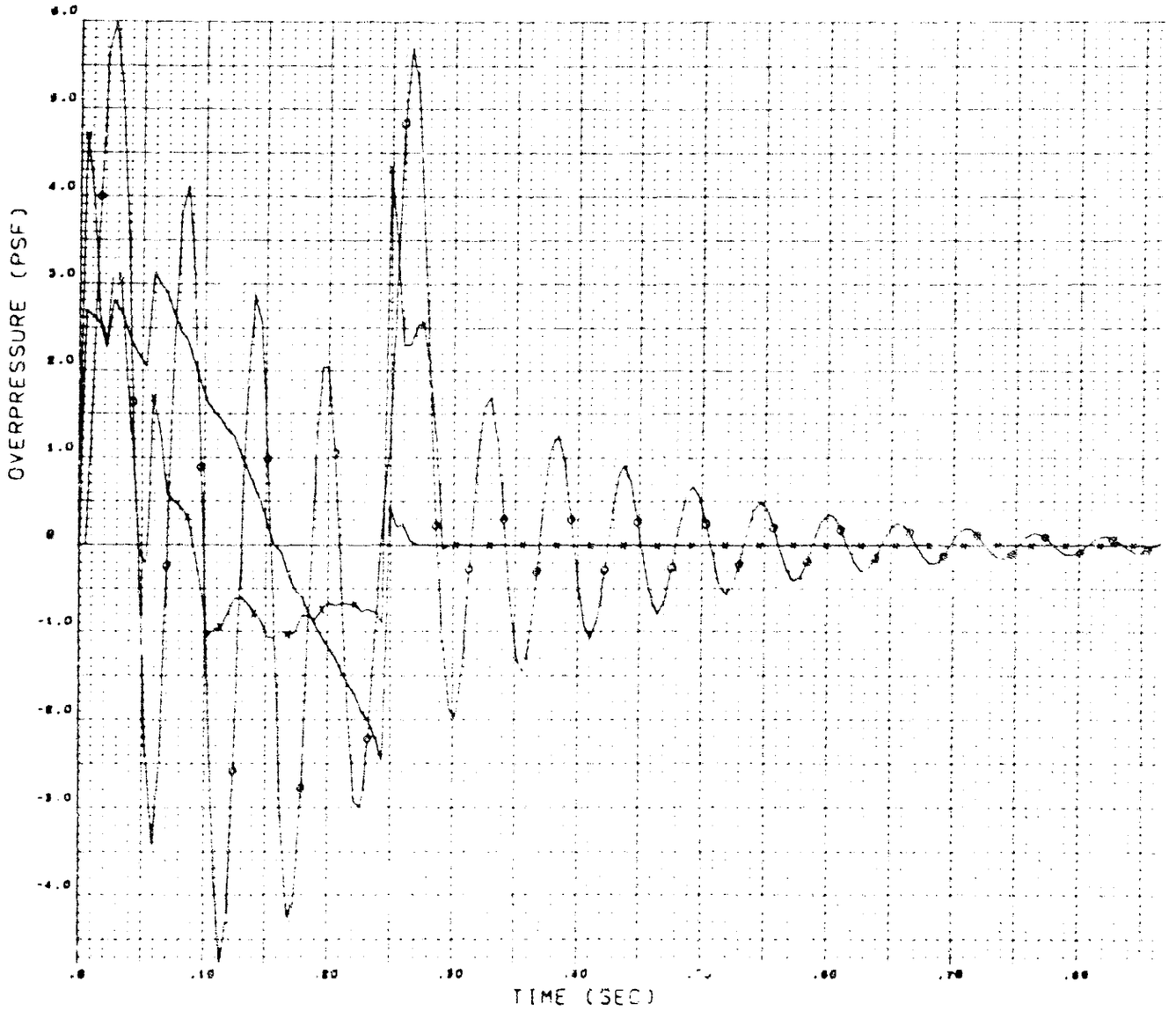
LOADING WAVE RACKING TYPE
O = PEFF
X = LOADING WAVE



RECORDED DATA

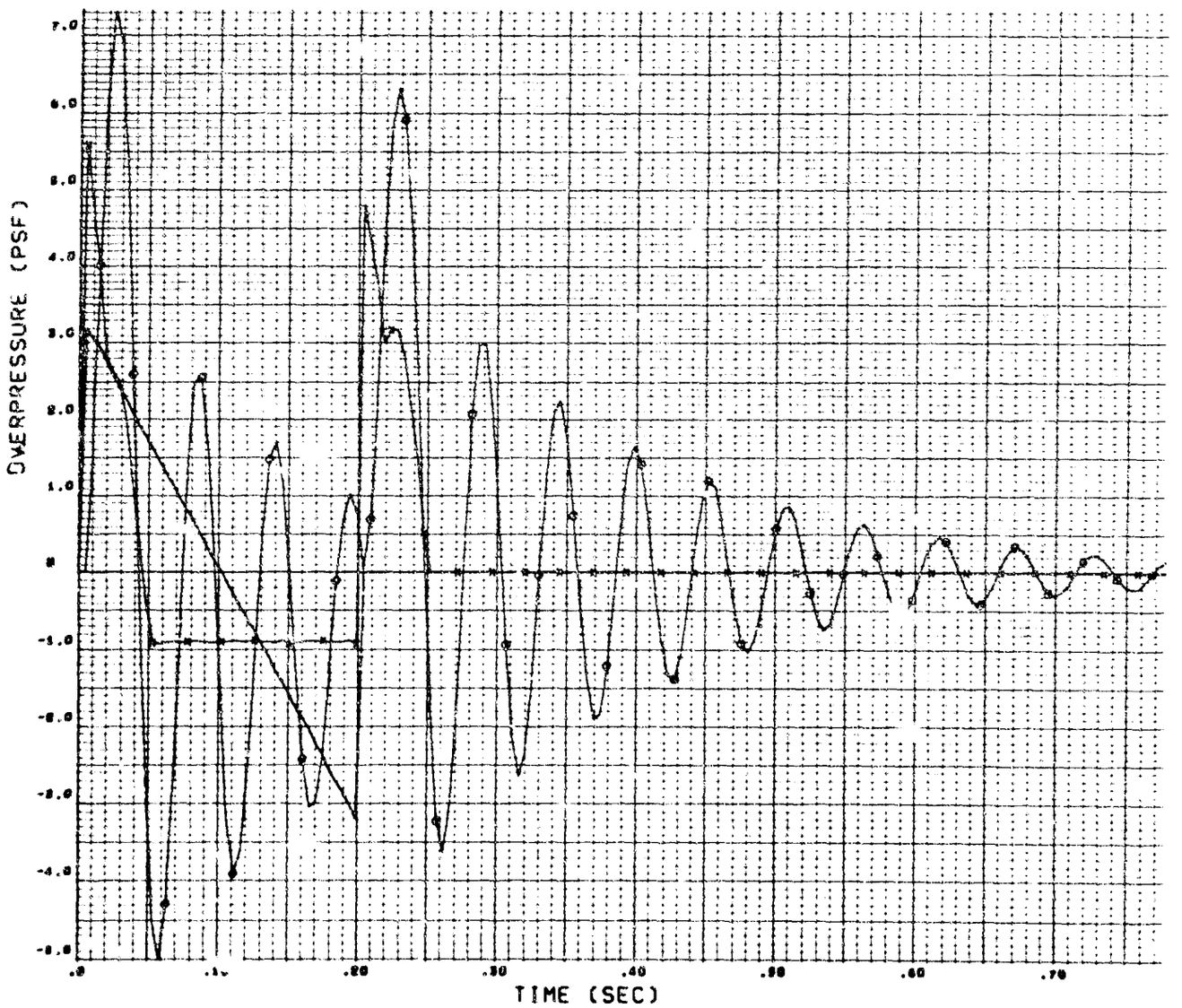
XB-70	1.22
ALTITUDE	27,000
ACTUAL PROFILE WT.	423,900
ELEMENT NUMBER	1

LOADING WAVE RACKING TYPE
U = PEFF
X = LOADING WAVE



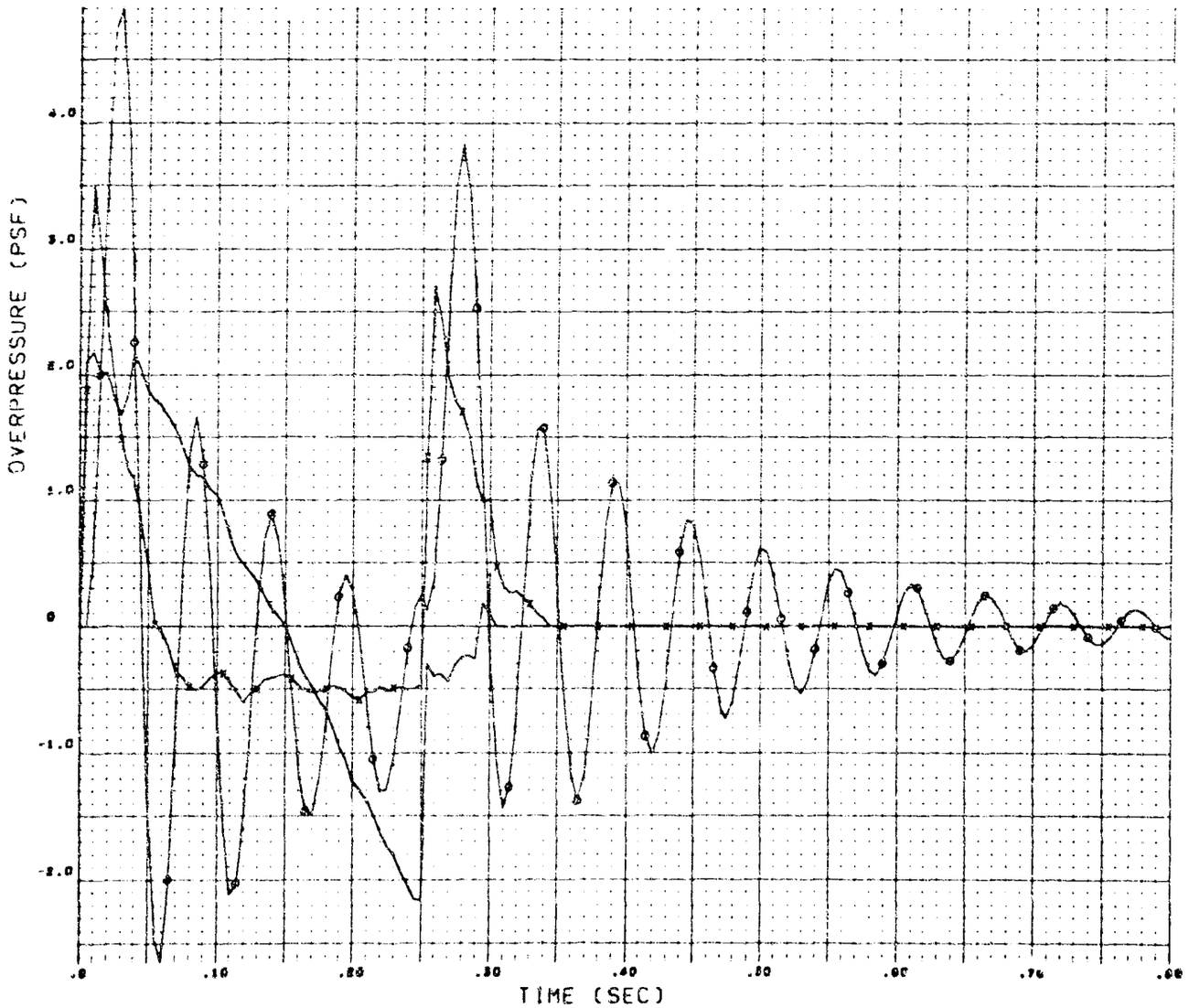
FAR FIELD THEORY
XB-70 1.22
ALTITUDE 27,000
ACTUAL PROFILE WT 423,900
ELEMENT NUMBER 1

LOADING WAVE RACKING TYPE
O = PEFF
X = LOADING WAVE



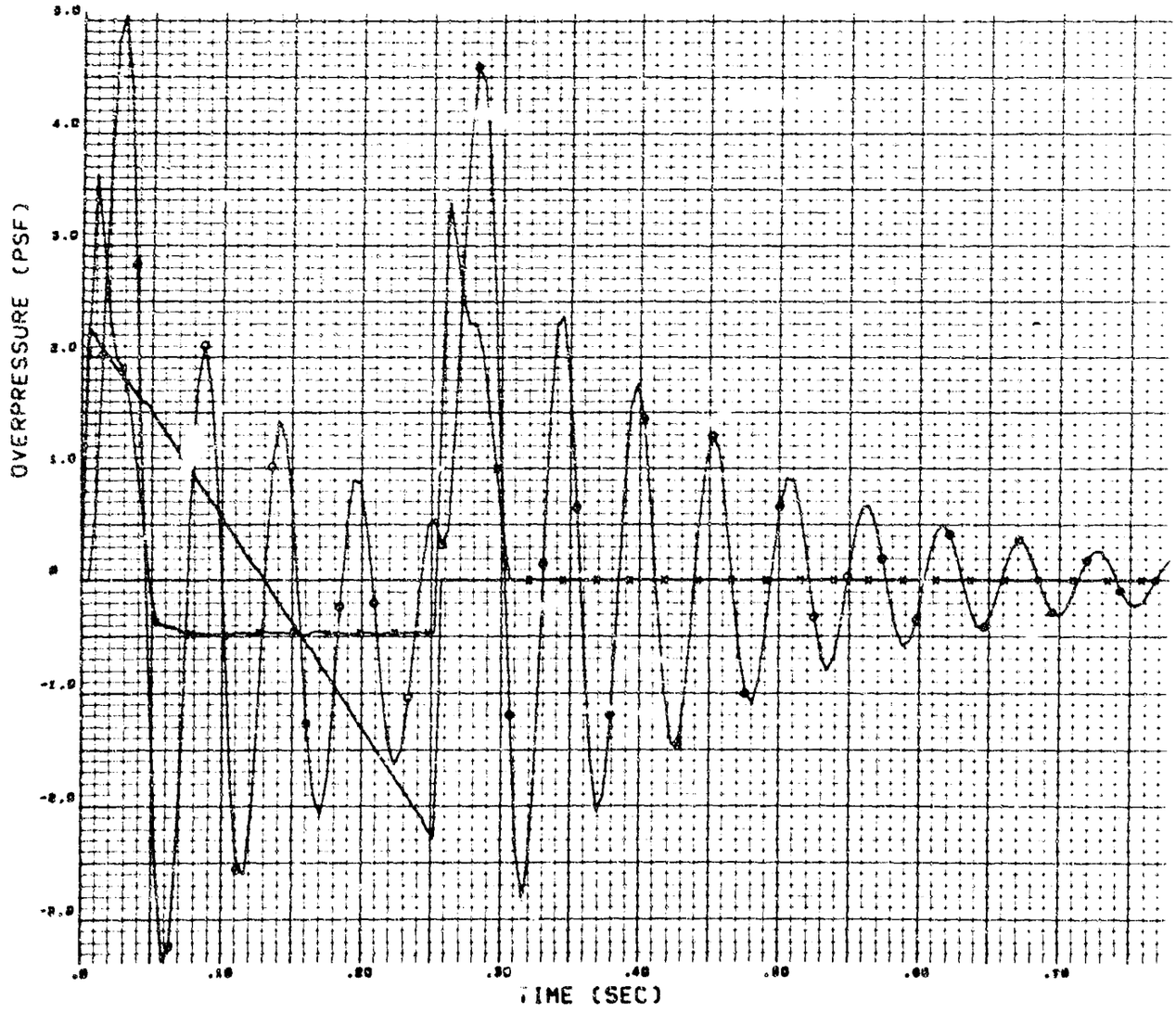
RECORDED DATA
XB-70
ALTITUDE 38,700
ACTUAL PROFILE WT. 357,000
ELEMENT NUMBER 1

LOADING WAVE RACKING TYPE
O = PEFF
X = LOADING WAVE



FAR FIELD THEORY
X8-70 1.40
ALTITUDE 38,700
ACTUAL PROFILE WT. 357,000
ELEMENT NUMBER 1

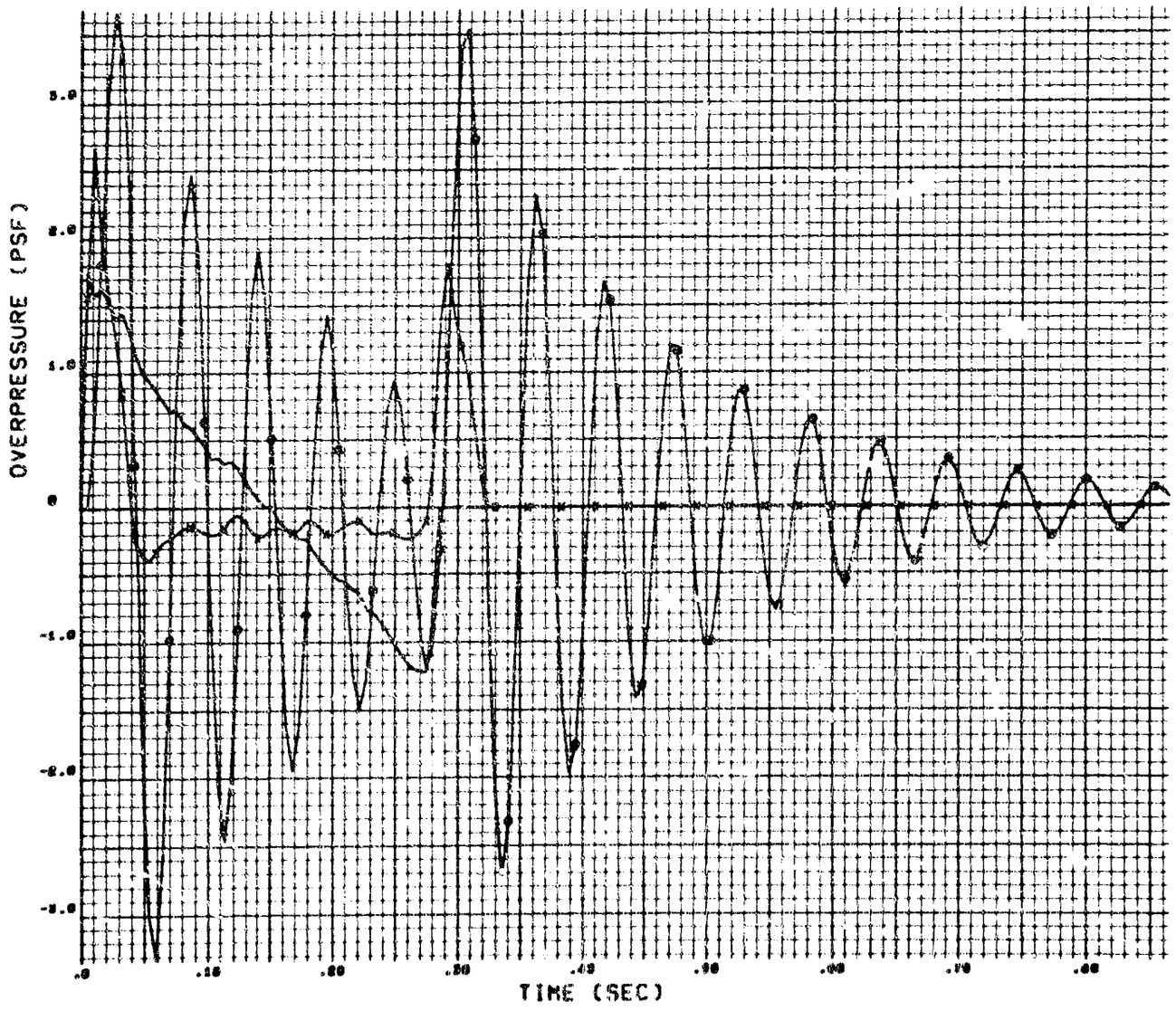
LOADING WAVE RACKING TYPE
O = PEFF
X = LOADING WAVE



RECORDED DATA

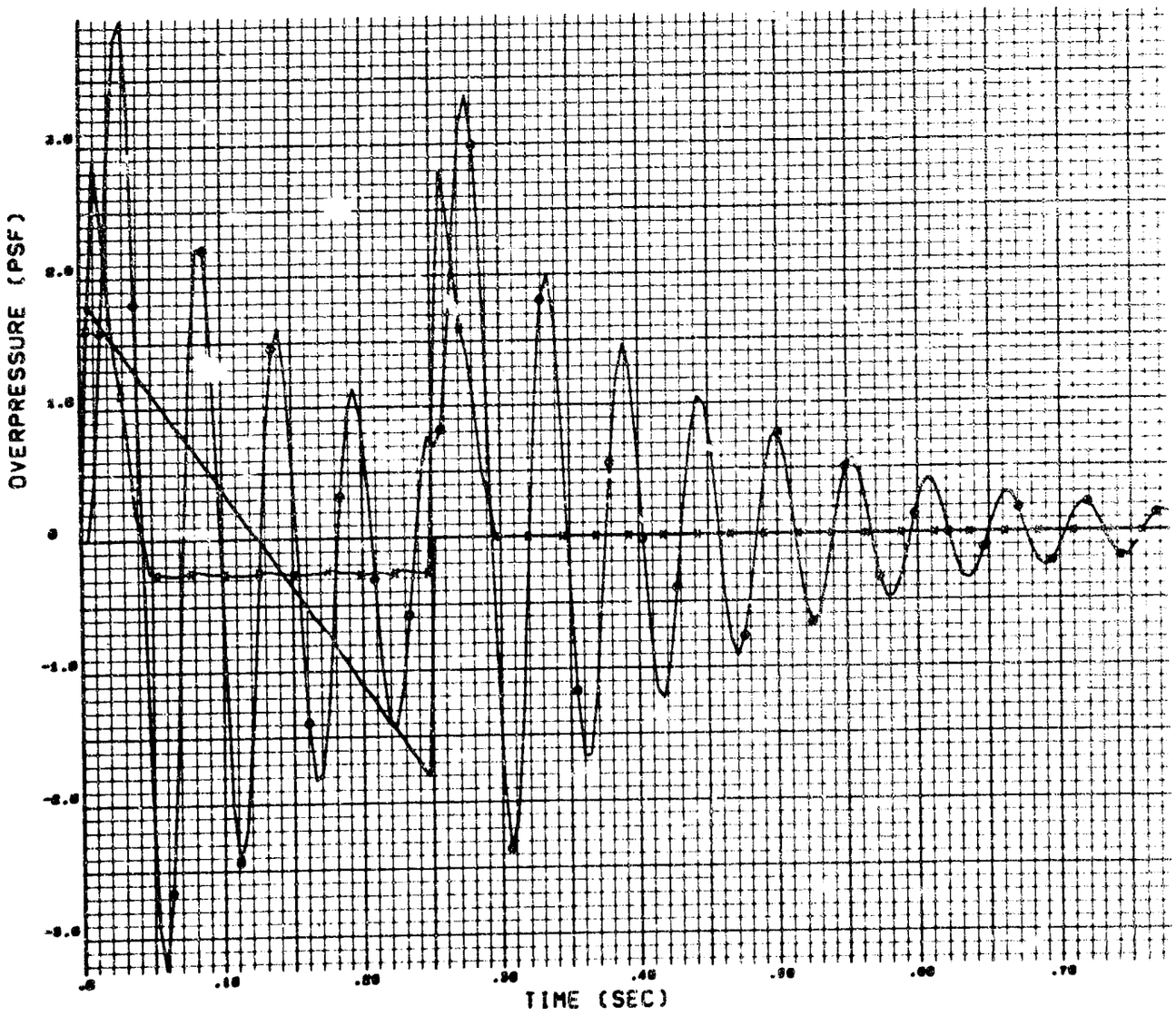
XB-70	1.86
ALTITUDE	48,000
ACTUAL PROFILE WT.	352,000
ELEMENT NUMBER	1

LOADING WAVE RACKING TYPE
O = PEFF
X = LOADING WAVE



FAR FIELD THEORY
XB-70 1.86
ALTITUDE 48.000
ACTUAL PROFILE WT. 352.000
ELEMENT NUMBER 1

LOADING WAVE RACKING TYPE
0 = PEFF
X = LOADING WAVE



Appendix 5

TABULATED RESULTS

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ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
1	RACK	A	1.25	40,899	NEAR

PMAX	3.31	2.16	3.37	2.16	3.37	2.16	3.37	2.16	MEAN	2.76	S.D.	1.08
PEFF	4.83	3.76	4.72	3.71	5.50	4.23	4.61	3.46	MEAN	4.35	S.D.	1.53
DAF	1.46	1.74	1.40	1.72	1.73	1.96	1.37	1.60	MEAN	1.61	S.D.	0.20

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
1	RACK	A	1.25	40,899	FAR

PMAX	4.36	2.54	4.36	2.54	4.36	2.54	4.36	2.54	MEAN	3.45	S.D.	1.45
PEFF	6.42	5.24	5.85	4.16	5.97	4.54	6.06	4.82	MEAN	5.38	S.D.	1.88
DAF	1.47	2.06	1.34	1.64	1.37	1.72	1.39	1.90	MEAN	1.62	S.D.	0.27

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
1	RACK	A	1.50	44,599	NEAR

PMAX	3.15	2.13	3.19	2.10	3.21	2.13	3.20	2.13	MEAN	2.65	S.D.	1.01
PEFF	5.44	4.11	4.77	3.18	4.74	3.37	4.80	3.48	MEAN	4.24	S.D.	1.56
DAF	1.73	1.93	1.50	1.52	1.48	1.59	1.50	1.64	MEAN	1.61	S.D.	0.16

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
1	RACK	A	1.50	44,599	FAR

PMAX	4.07	2.55	4.06	2.52	4.04	2.55	4.03	2.55	MEAN	3.30	S.D.	1.31
PEFF	5.88	4.68	6.58	4.69	5.63	3.66	5.75	4.20	MEAN	5.13	S.D.	1.88
DAF	1.44	1.83	1.62	1.86	1.39	1.43	1.43	1.65	MEAN	1.58	S.D.	0.19

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
1	RACK	A	2.00	49,599	NEAR

PMAX	3.62	1.85	3.60	1.83	3.59	1.80	3.57	1.45	MEAN	2.66	S.D.	1.30
PEFF	4.92	2.92	4.93	2.83	5.06	3.06	4.73	2.07	MEAN	3.81	S.D.	1.69
DAF	1.36	1.58	1.37	1.55	1.41	1.69	1.32	1.43	MEAN	1.46	S.D.	0.13

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
1	RACK	A	2.00	49,599	FAR

PMAX	3.62	2.04	3.60	2.02	3.60	2.01	3.60	1.70	MEAN	2.77	S.D.	1.24
PEFF	4.97	3.10	6.00	3.86	5.50	3.29	4.76	2.27	MEAN	4.22	S.D.	1.84
DAF	1.37	1.52	1.66	1.91	1.53	1.63	1.32	1.34	MEAN	1.54	S.D.	0.20

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
1	RACK	A	2.70	65,000	NEAR

PMAX	2.49	1.05	2.47	1.04	2.67	1.19	2.56	0.77	MEAN	1.79	S.D.	1.01
PEFF	3.25	1.57	3.29	1.65	3.64	1.75	3.36	1.07	MEAN	2.45	S.D.	1.28
DAF	1.31	1.50	1.33	1.59	1.36	1.47	1.26	1.38	MEAN	1.40	S.D.	0.11

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
1	RACK	A	2.70	65,000	FAR

PMAX	2.48	1.15	2.46	1.11	2.66	1.26	2.62	0.85	MEAN	1.83	S.D.	0.97
PEFF	3.86	2.08	3.20	1.69	3.82	1.99	3.74	1.34	MEAN	2.72	S.D.	1.34
DAF	1.55	1.81	1.30	1.52	1.43	1.58	1.42	1.59	MEAN	1.53	S.D.	0.15

[redacted]

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
1	RACK	B	1.3	38,000	NEAR

PMAX	2.77	1.94	2.85	1.94	2.84	1.94	3.09	1.94	MEAN	2.41	S.D.	0.91
PEFF	4.55	3.49	3.90	3.13	4.79	3.80	5.22	3.76	MEAN	4.08	S.D.	1.46
DAF	1.64	1.80	1.37	1.61	1.69	1.96	1.69	1.94	MEAN	1.71	S.D.	0.19

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
1	RACK	B	1.3	38,000	FAR

PMAX	4.03	2.52	4.01	2.52	4.00	2.52	4.36	2.52	MEAN	3.31	S.D.	1.34
PEFF	5.98	5.13	6.67	5.09	5.54	3.85	5.58	4.09	MEAN	5.24	S.D.	1.89
DAF	1.48	2.04	1.66	2.02	1.39	1.53	1.28	1.62	MEAN	1.63	S.D.	0.28

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
1	RACK	B	1.5	40,500	NEAR

PMAX	2.85	1.96	2.88	1.91	2.91	1.96	2.90	1.96	MEAN	2.42	S.D.	0.91
PEFF	4.22	3.29	4.76	3.60	4.65	3.31	4.33	2.88	MEAN	3.88	S.D.	1.40
DAF	1.48	1.68	1.65	1.88	1.60	1.69	1.49	1.47	MEAN	1.62	S.D.	0.14

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
1	RACK	B	1.5	40,500	FAR

PMAX	4.06	2.41	4.05	2.36	4.03	2.41	4.02	2.41	MEAN	3.22	S.D.	1.33
PEFF	5.60	3.66	6.24	4.57	6.43	4.47	5.42	3.30	MEAN	4.96	S.D.	1.93
DAF	1.38	1.52	1.54	1.94	1.59	1.85	1.35	1.37	MEAN	1.57	S.D.	0.22

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
1	RACK	B	2.2	45,000	NEAR

PMAX	3.31	1.69	3.42	1.73	3.41	1.70	3.40	1.56	MEAN	2.53	S.D.	1.21
PEFF	4.47	2.69	4.71	2.60	4.84	2.72	4.78	2.34	MEAN	3.64	S.D.	1.61
DAF	1.35	1.59	1.38	1.50	1.42	1.60	1.41	1.50	MEAN	1.47	S.D.	0.09

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
1	RACK	B	2.2	45,000	FAR

PMAX	3.31	1.74	3.67	1.72	3.65	1.69	3.64	1.66	MEAN	2.63	S.D.	1.29
PEFF	4.50	2.54	4.79	2.68	5.85	3.28	5.11	2.43	MEAN	3.90	S.D.	1.80
DAF	1.36	1.46	1.31	1.56	1.60	1.94	1.41	1.47	MEAN	1.51	S.D.	0.20

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
1	RACK	B	2.7	59,000	NEAR

PMAX	2.52	1.07	2.50	1.06	2.72	1.19	2.71	0.77	MEAN	1.82	S.D.	1.03
PEFF	3.30	1.60	3.34	1.62	3.69	1.74	3.41	1.08	MEAN	2.47	S.D.	1.30
DAF	1.31	1.50	1.34	1.54	1.36	1.46	1.26	1.39	MEAN	1.39	S.D.	0.10

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
1	RACK	B	2.7	59,000	FAR

PMAX	2.48	1.15	2.46	1.11	2.66	1.26	2.62	0.85	MEAN	1.83	S.D.	0.97
PEFF	3.86	2.09	3.20	1.70	3.83	2.01	3.75	1.35	MEAN	2.72	S.D.	1.34
DAF	1.55	1.82	1.30	1.53	1.44	1.59	1.43	1.60	MEAN	1.53	S.D.	0.15

[redacted]

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
	2	RACK	A	1.2[illegible]	40,899	NEAR					
PMAX	3.26	2.16	3.32	1.91	3.31	1.90	[illegible]50	2.16	MEAN	2.[illegible]9	S.D. 1.10
PEFF	4.36	3.16	5.27	3.27	5.04	2.92	3.92	2.49	MEAN	3.80	S.D. 1.56
DAF	1.34	1.47	1.59	1.71	1.52	1.54	1.12	1.16	MEAN	1.43	S.D. 0.21

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
	2	RACK	A	1.25	40,899	FAR					
PMAX	4.05	2.54	4.03	2.25	4.01	2.23	4.36	2.54	MEAN	3.25	S.D. 1.38
PEFF	5.81	3.89	5.36	3.07	6.20	3.92	6.11	3.67	MEAN	4.75	S.D. 1.94
DAF	1.43	1.53	1.33	1.37	1.54	1.76	1.40	1.45	MEAN	1.48	S.D. 0.14

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
	2	RACK	A	1.50	44,599	NEAR					
PMAX	3.27	1.90	3.31	1.88	3.33	1.61	3.31	1.59	MEAN	2.53	S.D. 1.15
PEFF	3.96	2.51	4.55	2.86	5.16	2.85	4.44	2.21	MEAN	3.57	S.D. 1.56
DAF	1.21	1.32	1.38	1.52	1.55	1.77	1.34	1.39	MEAN	1.43	S.D. 0.17

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
	2	RACK	A	1.50	44,599	FAR					
PMAX	4.07	2.26	4.06	2.26	4.04	1.92	4.03	1.39	MEAN	3.06	S.D. 1.42
PEFF	6.56	4.26	5.36	3.22	5.24	2.78	6.00	2.99	MEAN	4.55	S.D. 2.03
DAF	1.61	1.89	1.32	1.43	1.30	1.45	1.49	1.59	MEAN	1.51	S.D. 0.19

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
	2	RACK	A	2.00	49,599	NEAR					
PMAX	3.32	1.39	3.29	1.37	3.04	1.22	3.57	1.00	MEAN	2.28	S.D. 1.32
PEFF	4.11	2.02	4.31	2.27	3.87	1.68	4.10	1.36	MEAN	2.97	S.D. 1.54
DAF	1.24	1.45	1.31	1.65	1.27	1.38	1.15	1.36	MEAN	1.35	S.D. 0.15

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
	2	RACK	A	2.00	49,599	FAR					
PMAX	3.41	1.57	3.38	1.52	3.09	1.34	3.60	1.15	MEAN	2.38	S.D. 1.30
PEFF	5.09	2.56	4.95	2.53	3.87	1.62	4.41	1.68	MEAN	3.35	S.D. 1.75
DAF	1.49	1.70	1.46	1.67	1.25	1.21	1.23	1.45	MEAN	1.43	S.D. 0.19

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
	2	RACK	A	2.70	65,000	NEAR					
PMAX	2.32	0.98	2.29	0.96	2.25	0.94	2.02	1.06	MEAN	1.60	S.D. 0.83
PEFF	2.76	1.20	2.89	1.28	2.88	1.21	2.67	1.12	MEAN	2.00	S.D. 1.06
DAF	1.19	1.23	1.27	1.33	1.28	1.28	1.32	1.05	MEAN	1.24	S.D. 0.09

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
	2	RACK	A	2.70	65,000	FAR					
PMAX	2.33	1.00	2.30	0.99	2.27	0.97	2.04	1.08	MEAN	1.62	S.D. 0.83
PEFF	2.96	1.33	2.78	1.15	3.26	1.42	2.89	1.26	MEAN	2.13	S.D. 1.12
DAF	1.27	1.32	1.21	1.17	1.44	1.47	1.42	1.17	MEAN	1.31	S.D. 0.12

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
2	RACK	B	1.3	38,000	NEAR

PMAX	2.98	1.74	3.00	1.72	2.99	1.71	2.98	1.70	MEAN	2.35	S.D. 1.00
PEFF	4.13	2.76	4.56	2.97	4.75	2.77	3.67	2.12	MEAN	3.45	S.D. 1.44
DAF	1.39	1.58	1.52	1.67	1.59	1.62	1.23	1.25	MEAN	1.48	S.D. 0.17

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
2	RACK	B	1.3	38,000	FAR

PMAX	4.03	2.26	4.01	2.23	4.00	2.21	3.98	2.20	MEAN	3.11	S.D. 1.36
PEFF	6.04	3.73	5.25	2.98	5.58	3.56	6.59	3.7[illegible]	MEAN	4.69	S.D. 1.98
DAF	1.50	1.65	1.31	1.34	1.40	1.61	1.66	1.72	MEAN	1.[illegible]	S.D. 0.16

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
2	RACK	B	1.5	40,500	NEAR

PMAX	2.99	1.74	3.02	1.73	3.04	1.48	3.03	1.46	MEAN	2.31	S.D. 1.05
PEFF	5.10	3.[illegible]0	4.35	2.61	3.75	1.96	4.18	2.14	MEAN	3.43	S.D. 1.55
DAF	1.71	1.96	1.44	1.51	1.23	1.32	1.38	1.47	MEAN	1.50	S.D. 0.23

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
2	RACK	B	1.5	40,500	FAR

PMAX	4.06	2.14	4.05	2.14	4.03	1.83	4.02	1.79	MEAN	3.01	S.D. 1.45
PEFF	6.78	4.39	5.81	3.46	5.19	2.53	4.95	2.56	MEAN	4.46	S.D. 2.06
DAF	1.67	2.04	1.43	1.62	1.29	1.39	1.23	1.43	MEAN	1.51	S.D. 0.26

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
2	RACK	B	2.2	45,000	NEAR

PMAX	3.12	1.24	3.08	1.20	3.04	1.21	2.74	[illegible].36	MEAN	2.12	S.D. 1.14
PEFF	3.75	1.89	4.28	2.16	3.84	1.59	3.58	1.[illegible]7	MEAN	2.82	S.D. 1.44
DAF	1.20	1.53	1.39	1.81	1.26	1.32	1.31	1.08	MEAN	1.36	S.D. 0.22

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
2	RACK	B	2.2	45,000	FAR

PMAX	3.07	1.40	3.03	1.38	3.01	1.29	2.71	1.[illegible]4	MEAN	2.17	S.D. 1.[illegible]
PEFF	4.71	2.35	4.22	2.35	3.82	1.50	3.54	1.48	MEAN	3.13	S.D. 1.[illegible]
DAF	1.53	1.67	1.62	1.70	1.[illegible]7	1.24	1.31	1.02	MEAN	1.[illegible]	S.D. 0.[illegible]

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
2	RACK	B	2.7	59,000	NEAR

PMAX	2.35	0.99	2.32	0.97	2.29	0.95	2.05	1.07	MEAN	1.63	S.D. 0.86
PEFF	2.91	1.23	2.89	1.27	2.92	1.23	2.71	1.13	MEAN	2.07	S.D. 1.07
DAF	1.19	1.24	1.24	1.31	1.28	1.29	1.32	1.06	MEAN	1.24	S.D. 0.[illegible]

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
2	RACK	B	2.7	59,000	FAR

PMAX	2.33	1.00	2.30	0.99	2.27	0.97	2.04	1.08	MEAN	1.62	S.D. 0.81
PEFF	2.95	1.32	2.78	1.15	3.25	1.43	2.89	1.26	MEAN	2.13	S.D. 1.13
DAF	1.27	1.32	1.21	1.17	1.44	1.47	1.41	1.17	MEAN	1.31	S.D. 0.[illegible]

[redacted] [redacted]

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
3	RACK	A	1.25	40,899	NEAR

PMAX	3.42	2.78	3.42	2.73	3.43	2.69	3.42	2.64	MEAN	3.07	S.D.	1.04
PEFF	5.45	4.18	5.10	3.83	4.60	3.30	4.36	3.07	MEAN	4.24	S.D.	1.[illegible]
DAF	1.59	1.51	1.49	1.40	1.34	1.23	1.27	1.16	MEAN	1.37	S.D.	0.15

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
3	RACK	A	1.25	40,899	FAR

PMAX	4.13	3.29	4.17	3.23	4.16	3.17	4.15	3.11	MEAN	3.68	S.D.	1.27
PEFF	6.60	4.91	5.16	3.62	5.18	3.51	5.89	4.20	MEAN	4.89	S.D.	1.87
DAF	1.59	1.49	1.24	1.12	1.24	1.11	1.42	1.35	MEAN	1.32	S.D.	0.17

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
3	RACK	A	1.50	44,599	NEAR

PMAX	3.36	2.53	3.30	2.33	3.29	2.26	3.32	2.04	MEAN	2.80	S.D.	1.04
PEFF	4.41	3.36	5.47	4.02	5.77	4.13	4.97	3.26	MEAN	4.42	S.D.	1.66
DAF	1.31	1.32	1.66	1.72	1.76	1.83	1.50	1.60	MEAN	1.59	S.D.	0.19

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
3	RACK	A	1.50	44,599	FAR

PMAX	4.03	3.02	3.98	2.80	3.97	2.71	3.99	2.43	MEAN	3.36	S.D.	1.26
PEFF	7.09	5.18	5.55	3.90	4.82	3.22	4.73	2.99	MEAN	4.68	S.D.	1.98
DAF	1.76	1.72	1.39	1.40	1.22	1.19	1.19	1.23	MEAN	1.39	S.D.	0.23

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
3	RACK	A	2.00	49,599	NEAR

PMAX	3.35	2.08	3.24	1.83	3.20	1.67	3.43	1.94	MEAN	2.59	S.D.	1.12
PEFF	4.30	3.12	4.79	3.32	4.36	2.80	4.12	2.57	MEAN	3.67	S.D.	1.41
DAF	1.28	1.50	1.48	1.81	1.36	1.68	1.20	1.33	MEAN	1.46	S.D.	0.21

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
3	RACK	A	2.00	49,599	FAR

PMAX	3.37	2.23	3.24	1.94	3.20	1.73	3.43	2.07	MEAN	2.65	S.D.	1.10
PEFF	5.90	4.25	5.13	3.46	4.82	2.43	4.12	2.59	MEAN	3.96	S.D.	1.71
DAF	1.75	1.91	1.58	1.79	1.19	1.40	1.20	1.25	MEAN	1.51	S.D.	0.29

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
3	RACK	A	2.70	65,000	NEAR

PMAX	2.39	1.44	2.37	1.28	2.34	1.22	2.24	1.09	MEAN	1.80	S.D.	0.81
PEFF	3.27	2.35	3.24	2.18	3.80	1.78	2.65	1.51	MEAN	2.48	S.D.	1.01
DAF	1.37	1.62	1.39	1.70	1.20	1.48	1.18	1.39	MEAN	1.41	S.D.	0.18

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
3	RACK	A	2.70	65,000	FAR

PMAX	2.40	1.55	2.40	1.34	2.38	1.28	2.24	1.11	MEAN	1.84	S.D.	0.81
PEFF	3.51	2.43	2.82	1.79	2.80	1.77	2.86	1.70	MEAN	2.46	S.D.	1.01
DAF	1.46	1.57	1.17	1.33	1.18	1.38	1.27	1.53	MEAN	1.36	S.D.	0.15

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ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
3	RACK	B	1.3	38,000	NEAR

PMAX	3.08	2.53	3.07	2.48	3.06	2.43	3.09	2.38	MEAN	2.77	S.D.	0.93
PEFF	3.79	2.92	4.77	3.63	5.27	3.97	4.95	3.55	MEAN	4.10	S.D.	1.52
DAF	1.23	1.15	1.55	1.46	1.72	1.63	1.60	1.49	MEAN	1.48	S.D.	0.20

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
3	RACK	B	1.3	38,000	FAR

PMAX	4.16	3.28	4.15	3.22	4.14	3.16	4.14	3.08	MEAN	3.67	S.D.	1.26
PEFF	5.00	3.53	5.69	4.34	7.27	5.39	7.44	5.29	MEAN	5.49	S.D.	2.17
DAF	1.20	1.08	1.37	1.35	1.76	1.71	1.80	1.72	MEAN	1.50	S.D.	0.28

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
3	RACK	B	1.5	40,500	NEAR

PMAX	3.06	2.33	3.01	2.16	2.99	2.09	3.03	1.86	MEAN	2.57	S.D.	0.95
PEFF	3.89	3.03	3.71	2.76	4.41	3.21	5.07	3.58	MEAN	3.71	S.D.	1.39
DAF	1.27	1.30	1.23	1.28	1.47	1.53	1.68	1.92	MEAN	1.46	S.D.	0.24

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
3	RACK	B	1.5	40,500	FAR

PMAX	3.94	2.87	3.93	2.67	3.91	2.59	3.90	2.30	MEAN	3.26	S.D.	1.25
PEFF	4.80	3.36	4.71	3.19	5.18	3.71	6.33	4.26	MEAN	4.44	S.D.	1.74
DAF	1.22	1.17	1.20	1.20	1.32	1.43	1.62	1.85	MEAN	1.38	S.D.	0.25

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
3	RACK	B	2.2	45,000	NEAR

PMAX	3.13	1.94	3.09	1.80	3.06	1.68	3.02	1.55	MEAN	2.41	S.D.	1.04
PEFF	3.75	2.56	3.76	2.49	3.67	2.37	3.67	2.25	MEAN	3.07	S.D.	1.19
DAF	1.20	1.32	1.22	1.38	1.20	1.41	1.21	1.45	MEAN	1.30	S.D.	0.10

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
3	RACK	B	2.2	45,000	FAR

PMAX	3.25	2.05	3.22	1.88	3.18	1.69	3.14	1.62	MEAN	2.50	S.D.	1.08
PEFF	3.84	2.55	3.85	2.45	3.77	2.35	4.31	2.72	MEAN	3.23	S.D.	1.28
DAF	1.18	1.24	1.20	1.31	1.19	1.40	1.37	1.68	MEAN	1.32	S.D.	0.17

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
3	RACK	B	2.7	59,000	NEAR

PMAX	2.46	1.49	2.44	1.31	2.41	1.25	2.29	1.12	MEAN	1.85	S.D.	0.83
PEFF	3.33	2.35	3.37	2.22	2.88	1.83	2.72	1.57	MEAN	2.53	S.D.	1.03
DAF	1.35	1.58	1.39	1.70	1.19	1.47	1.19	1.39	MEAN	1.41	S.D.	0.18

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
3	RACK	B	2.7	59,000	FAR

PMAX	2.40	1.55	2.40	1.34	2.38	1.28	2.24	1.11	MEAN	1.84	S.D.	0.81
PEFF	3.52	2.44	2.82	1.79	2.80	1.77	2.86	1.70	MEAN	2.46	S.D.	1.01
DAF	1.46	1.57	1.17	1.33	1.18	1.38	1.28	1.53	MEAN	1.36	S.D.	0.15

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
4	RACK	A	1.25	40,899	NEAR

PMAX	3.34	2.91	3.37	2.93	3.49	2.75	3.41	2.70	MEAN	3.10	S.D.	1.02
PEFF	5.01	4.03	4.37	3.02	5.10	3.92	5.49	4.15	MEAN	4.57	S.D.	1.57
DAF	1.50	1.39	1.47	1.34	1.49	1.42	1.61	1.54	MEAN	1.47	S.D.	0.09

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
4	RACK	A	1.25	40,899	FAR

PMAX	4.16	2.47	4.18	3.45	4.17	3.25	4.17	3.20	MEAN	3.76	S.D.	1.27
PEFF	5.74	4.36	7.22	5.67	7.23	5.34	5.80	4.20	MEAN	5.70	S.D.	2.12
DAF	1.37	1.26	1.73	1.64	1.75	1.64	1.39	1.31	MEAN	1.51	S.D.	0.20

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
4	RACK	A	1.50	44,599	NEAR

PMAX	3.33	2.60	3.32	2.54	3.35	2.50	3.29	2.50	MEAN	2.90	S.D.	1.02
PEFF	6.17	4.77	4.96	3.69	4.30	3.27	4.16	3.10	MEAN	4.30	S.D.	1.68
DAF	1.85	1.84	1.50	1.46	1.28	1.31	1.26	1.35	MEAN	1.48	S.D.	0.24

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
4	RACK	A	1.50	44,599	FAR

PMAX	4.02	3.12	4.00	3.05	4.02	2.97	3.97	2.76	MEAN	3.49	S.D.	1.23
PEFF	5.33	3.94	5.58	4.33	6.98	5.11	6.54	4.57	MEAN	5.30	S.D.	1.97
DAF	1.33	1.26	1.39	1.42	1.74	1.72	1.65	1.66	MEAN	1.52	S.D.	0.19

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
4	RACK	A	2.00	49,599	NEAR

PMAX	3.38	2.28	3.36	2.12	3.33	1.95	3.22	1.80	MEAN	2.68	S.D.	1.09
PEFF	4.72	3.56	4.40	3.12	4.39	3.00	4.20	2.82	MEAN	3.78	S.D.	1.40
DAF	1.39	1.56	1.31	1.47	1.32	1.54	1.30	1.57	MEAN	1.43	S.D.	0.12

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
4	RACK	A	2.00	49,599	FAR

PMAX	3.39	2.47	3.38	2.26	3.36	2.09	3.22	1.90	MEAN	2.76	S.D.	1.07
PEFF	4.46	3.22	4.41	3.13	5.19	3.74	5.46	3.80	MEAN	4.18	S.D.	1.56
DAF	1.32	1.31	1.30	1.38	1.55	1.79	1.70	1.99	MEAN	1.54	S.D.	0.26

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
4	RACK	A	2.70	65,000	NEAR

PMAX	2.24	1.28	2.40	1.47	2.38	1.30	2.36	1.25	MEAN	1.84	S.D.	0.79
PEFF	2.86	1.96	3.14	2.16	3.07	2.02	3.18	2.17	MEAN	2.57	S.D.	0.97
DAF	1.28	1.53	1.30	1.47	1.29	1.55	1.35	1.73	MEAN	1.44	S.D.	0.16

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
4	RACK	A	2.70	65,000	FAR

PMAX	2.31	1.36	2.41	1.58	2.42	1.37	2.39	1.32	MEAN	1.89	S.D.	0.79
PEFF	2.90	2.00	3.90	2.78	3.86	2.63	3.02	1.98	MEAN	2.88	S.D.	1.16
DAF	1.26	1.47	1.62	1.76	1.60	1.92	1.26	1.50	MEAN	1.55	S.D.	0.23

[redacted]

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
4	RACK	B	1.3	38,000	NEAR

PMAX	3.00	2.50	3.00	2.60	3.07	2.50	3.07	2.46	MEAN	2.77	S.D.	0.92
PEFF	5.50	4.40	5.09	4.16	4.19	3.16	4.20	3.18	MEAN	4.23	S.D.	1.56
DAF	1.83	1.76	1.70	1.60	1.36	1.26	1.37	1.29	MEAN	1.52	S.D.	0.23

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
4	RACK	B	1.3	38,000	FAR

PMAX	3.99	3.24	4.16	3.38	4.15	3.24	4.15	3.19	MEAN	3.69	S.D.	1.25
PEFF	7.78	6.22	7.75	6.28	5.99	4.52	5.6	3.90	MEAN	6.01	S.D.	2.32
DAF	1.95	1.92	1.86	1.86	1.44	1.39	1.56	1.22	MEAN	1.63	S.D.	0.30

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
4	RACK	B	1.5	40,500	NEAR

PMAX	3.03	2.40	3.02	2.35	3.06	2.29	3.00	2.13	MEAN	2.66	S.D.	0.93
PEFF	5.32	4.24	5.79	4.62	5.27	3.93	3.94	2.90	MEAN	4.50	S.D.	1.70
DAF	1.76	1.77	1.91	1.97	1.72	1.71	1.31	1.36	MEAN	1.69	S.D.	0.24

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
4	RACK	B	1.5	40,500	FAR

PMAX	3.96	2.97	3.95	2.91	3.94	2.83	3.92	2.63	MEAN	3.39	S.D.	1.22
PEFF	6.41	5.01	7.44	5.80	7.06	5.19	5.40	3.79	MEAN	5.76	S.D.	2.16
DAF	1.62	1.68	1.88	2.00	1.79	1.84	1.38	1.44	MEAN	1.70	S.D.	0.22

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
4	RACK	B	2.2	45,000	NEAR

PMAX	3.32	2.17	3.14	1.98	3.11	1.83	3.08	1.72	MEAN	2.54	S.D.	1.04
PEFF	4.26	3.03	4.33	3.17	4.99	3.54	4.74	3.12	MEAN	3.90	S.D.	1.45
DAF	1.28	1.40	1.38	1.60	1.60	1.93	1.54	1.81	MEAN	1.57	S.D.	0.22

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
4	RACK	B	2.2	45,000	FAR

PMAX	3.33	2.30	3.27	2.09	3.23	1.91	3.20	1.73	MEAN	2.63	S.D.	1.07
PEFF	4.33	3.20	5.39	3.87	5.79	3.99	5.14	3.37	MEAN	4.38	S.D.	1.67
DAF	1.30	1.39	1.65	1.85	1.79	2.09	1.61	1.95	MEAN	1.70	S.D.	0.27

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
4	RACK	B	2.7	59,000	NEAR

PMAX	2.33	1.32	2.47	1.52	2.45	1.33	2.42	1.28	MEAN	1.89	S.D.	0.82
PEFF	2.95	2.02	3.22	2.23	3.16	2.07	3.23	2.14	MEAN	2.63	S.D.	0.99
DAF	1.27	1.53	1.30	1.47	1.29	1.55	1.34	1.68	MEAN	1.43	S.D.	0.15

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
4	RACK	B	2.7	59,000	FAR

PMAX	2.31	1.36	2.41	1.58	2.42	1.37	2.39	1.32	MEAN	1.89	S.D.	0.79
PEFF	2.90	2.00	3.90	2.78	3.86	2.63	3.02	1.98	MEAN	2.88	S.D.	1.16
DAF	1.26	1.47	1.62	1.76	1.60	1.92	1.26	1.50	MEAN	1.55	S.D.	0.23

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	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
	5	RACK	A	1.25	40,899	NEAR					
PMAX	3.10	2.75	3.08	2.67	3.14	2.75	3.10	2.63	MEAN	2.90	S.D. 0.94
PEFF	1.42	1.13	1.43	1.14	1.48	1.16	1.49	1.16	MEAN	1.30	S.D. 0.44
DAF	0.46	0.41	0.47	0.42	0.47	0.42	0.48	0.44	MEAN	0.45	S.D. 0.03

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
	5	RACK	A	1.25	40,899	FAR					
PMAX	3.71	3.27	3.69	3.18	3.73	3.23	3.70	3.12	MEAN	3.45	S.D. 1.12
PEFF	1.29	1.03	1.31	1.03	1.35	1.05	1.37	1.06	MEAN	1.19	S.D. 0.40
DAF	0.35	0.31	0.36	0.32	0.36	0.33	0.37	0.34	MEAN	0.34	S.D. 0.02

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
	5	RACK	A	1.50	44,599	NEAR					
PMAX	2.51	2.10	2.56	2.17	2.46	2.10	2.52	2.13	MEAN	2.32	S.D. 0.76
PEFF	1.19	0.94	1.24	0.97	1.25	0.97	1.26	0.97	MEAN	1.10	S.D. 0.38
DAF	0.47	0.45	0.48	0.45	0.51	0.46	0.50	0.46	MEAN	0.47	S.D. 0.02

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
	5	RACK	A	1.50	44,599	FAR					
PMAX	2.99	2.56	3.07	2.60	2.96	2.52	3.06	2.56	MEAN	2.79	S.D. 0.91
PEFF	1.23	0.97	1.27	0.99	1.28	0.99	1.31	1.00	MEAN	1.13	S.D. 0.39
DAF	0.41	0.38	0.41	0.38	0.43	0.39	0.43	0.39	MEAN	0.40	S.D. 0.02

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
	5	RACK	A	2.00	49,599	NEAR					
PMAX	2.29	1.82	2.25	1.76	2.22	1.73	2.26	1.72	MEAN	2.01	S.D. 0.69
PEFF	1.10	0.86	1.11	0.85	1.11	0.85	1.13	0.85	MEAN	0.98	S.D. 0.34
DAF	0.48	0.47	0.49	0.49	0.50	0.49	0.50	0.50	MEAN	0.49	S.D. 0.01

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
	5	RACK	A	2.00	49,599	FAR					
PMAX	2.30	2.07	2.28	2.01	2.31	2.02	2.28	1.97	MEAN	2.15	S.D. 0.69
PEFF	1.09	0.85	1.09	0.84	1.11	0.85	1.12	0.85	MEAN	0.97	S.D. 0.33
DAF	0.47	0.41	0.48	0.42	0.48	0.42	0.49	0.43	MEAN	0.45	S.D. 0.03

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
	5	RACK	A	2.70	65,000	NEAR					
PMAX	1.52	1.29	1.52	1.25	1.55	1.24	1.59	1.23	MEAN	1.40	S.D. 0.47
PEFF	0.78	0.61	0.79	0.62	0.81	0.62	0.82	0.62	MEAN	0.71	S.D. 0.24
DAF	0.51	0.48	0.52	0.49	0.52	0.50	0.51	0.50	MEAN	0.50	S.D. 0.02

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
	5	RACK	A	2.70	65,000	FAR					
PMAX	1.61	1.40	1.60	1.35	1.59	1.35	1.59	1.35	MEAN	1.48	S.D. 0.48
PEFF	0.79	0.61	0.80	0.62	0.82	0.62	0.82	0.63	MEAN	0.71	S.D. 0.25
DAF	0.49	0.44	0.50	0.47	0.51	0.46	0.52	0.46	MEAN	0.48	S.D. 0.03

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ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
5	RACK	B	1.3	38,000	NEAR

PMAX	2.87	2.29	2.98	2.38	2.96	2.33	2.80	2.24	MEAN	2.61	S.D.	0.88
PEFF	1.29	1.03	1.34	1.05	1.36	1.06	1.38	1.08	MEAN	1.20	S.D.	0.41
DAF	0.45	0.45	0.45	0.44	0.46	0.45	0.49	0.48	MEAN	0.46	S.D.	0.02

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
5	RACK	B	1.3	38,000	FAR

PMAX	3.37	2.92	3.44	2.96	3.36	2.87	3.44	2.90	MEAN	3.16	S.D.	1.03
PEFF	1.20	0.93	1.22	0.94	1.24	0.95	1.28	0.98	MEAN	1.09	S.D.	0.38
DAF	0.36	0.32	0.36	0.32	0.37	0.33	0.37	0.34	MEAN	0.34	S.D.	0.02

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
5	RACK	B	1.5	40,500	NEAR

PMAX	2.37	1.93	2.44	1.99	2.36	1.94	2.47	1.96	MEAN	2.18	S.D.	0.73
PEFF	1.17	0.92	1.18	0.92	1.19	0.93	1.22	0.95	MEAN	1.06	S.D.	0.36
DAF	0.49	0.48	0.48	0.46	0.51	0.48	0.50	0.48	MEAN	0.48	S.D.	0.01

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
5	RACK	B	1.5	40,500	FAR

PMAX	2.84	2.39	2.93	2.45	2.82	2.39	2.94	2.41	MEAN	2.65	S.D.	0.87
PEFF	1.16	0.90	1.18	0.91	1.20	0.91	1.23	0.93	MEAN	1.05	S.D.	0.36
DAF	0.41	0.38	0.40	0.37	0.43	0.38	0.42	0.38	MEAN	0.40	S.D.	0.02

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
5	RACK	B	2.2	45,000	NEAR

PMAX	2.05	1.72	2.06	1.71	2.07	1.70	2.04	1.69	MEAN	1.88	S.D.	0.62
PEFF	1.04	0.79	0.99	0.78	1.02	0.77	1.02	0.76	MEAN	0.89	S.D.	0.31
DAF	0.51	0.46	0.48	0.44	0.49	0.45	0.50	0.45	MEAN	0.47	S.D.	0.03

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
5	RACK	B	2.2	45,000	FAR

PMAX	2.20	1.97	2.20	1.91	2.22	1.91	2.18	1.86	MEAN	2.06	S.D.	0.67
PEFF	1.17	0.89	1.08	0.80	1.06	0.79	1.06	0.79	MEAN	0.96	S.D.	0.34
DAF	0.53	0.45	0.49	0.42	0.48	0.41	0.49	0.42	MEAN	0.46	S.D.	0.04

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
5	RACK	B	2.7	59,000	NEAR

PMAX	1.60	1.30	1.59	1.27	1.60	1.26	1.63	1.25	MEAN	1.44	S.D.	0.49
PEFF	0.81	0.63	0.82	0.64	0.83	0.64	0.84	0.64	MEAN	0.73	S.D.	0.25
DAF	0.50	0.49	0.52	0.50	0.52	0.51	0.52	0.51	MEAN	0.51	S.D.	0.01

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
5	RACK	B	2.7	59,000	FAR

PMAX	1.59	1.40	1.57	1.35	1.57	1.35	1.59	1.35	MEAN	1.47	S.D.	0.48
PEFF	0.79	0.61	0.80	0.62	0.81	0.62	0.82	0.62	MEAN	0.71	S.D.	0.25
DAF	0.47	0.44	0.51	0.46	0.52	0.46	0.52	0.46	MEAN	0.48	S.D.	0.03

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ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
6	RACK	A	1.25	40,899	NEAR

PMAX	3.49	3.15	3.46	3.12	3.51	3.16	3.53	3.14	MEAN	3.32	S.D.	1.06
PEFF	3.08	2.75	3.14	2.7	3.22	2.86	3.34	3.18	MEAN	3.04	S.D.	0.98
DAF	0.88	0.87	0.91	0.89	0.92	0.90	0.95	1.01	MEAN	0.92	S.D.	0.04

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
6	RACK	A	1.25	40,899	FAR

PMAX	3.80	3.43	3.79	3.41	3.87	3.44	3.86	3.47	MEAN	3.63	S.D.	1.16
PEFF	2.83	2.68	3.22	3.13	3.74	3.59	4.21	4.00	MEAN	3.42	S.D.	1.21
DAF	0.74	0.78	0.85	0.92	0.97	1.04	1.09	1.15	MEAN	0.94	S.D.	0.15

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
6	RACK	A	1.5	44,599	NEAR

PMAX	3.18	2.76	3.23	2.79	3.19	2.77	3.19	2.77	MEAN	2.98	S.D.	0.97
PEFF	2.62	2.32	2.74	2.41	2.79	2.45	2.84	2.49	MEAN	2.58	S.D.	0.83
DAF	0.82	0.84	0.85	0.86	0.87	0.88	0.89	0.90	MEAN	0.87	S.D.	0.03

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
6	RACK	A	1.5	44,599	FAR

PMAX	3.53	3.41	3.57	3.44	3.61	3.40	3.63	3.40	MEAN	3.50	S.D.	1.11
PEFF	2.73	2.42	2.82	2.49	2.87	2.74	3.35	3.18	MEAN	2.83	S.D.	0.94
DAF	0.77	0.71	0.79	0.72	0.79	0.81	0.92	0.94	MEAN	0.81	S.D.	0.09

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
6	RACK	A	2.0	49,599	NEAR

PMAX	3.00	2.58	2.97	2.54	2.95	2.53	3.03	2.57	MEAN	2.77	S.D.	0.90
PEFF	2.46	2.18	2.50	2.20	2.51	2.20	2.56	2.24	MEAN	2.36	S.D.	0.76
DAF	0.82	0.84	0.84	0.87	0.85	0.87	0.85	0.87	MEAN	0.85	S.D.	0.02

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
12	PLATE	A	2.00	49,599	FAR

PMAX	2.96	2.85	2.94	2.79	2.98	2.81	3.00	2.81	MEAN	2.89	S.D.	0.92
PEFF	2.43	2.16	2.46	2.17	2.49	2.19	2.54	2.22	MEAN	2.33	S.D.	0.75
DAF	0.82	0.76	0.84	0.78	0.84	0.78	0.85	0.79	MEAN	0.81	S.D.	0.03

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
6	RACK	A	2.7	65,000	NEAR

PMAX	2.07	1.83	2.10	1.84	2.13	1.84	2.19	1.86	MEAN	1.98	S.D.	0.64
PEFF	1.78	1.59	1.81	1.60	1.84	1.62	1.87	1.64	MEAN	1.72	S.D.	0.55
DAF	0.86	0.86	0.87	0.87	0.86	0.88	0.86	0.88	MEAN	0.87	S.D.	0.01

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
6	RACK	A	2.7	65,000	FAR

PMAX	2.12	2.03	2.12	2.01	2.16	2.02	2.15	2.13	MEAN	2.08	S.D.	0.66
PEFF	1.73	1.60	1.82	1.61	1.87	1.64	1.88	1.74	MEAN	1.74	S.D.	0.56
DAF	0.85	0.79	0.86	0.80	0.86	0.81	0.88	0.86	MEAN	0.84	S.D.	0.03

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ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
6	RACK	B	1.3	38,000	NEAR

PMAX	3.06	2.63	3.16	2.72	3.15	2.70	3.02	2.57	MEAN	2.88	S.D.	0.94
PEFF	2.77	2.45	2.89	2.54	2.95	2.58	2.97	2.61	MEAN	2.72	S.D.	0.88
DAF	0.91	0.93	0.91	0.94	0.93	0.96	0.98	1.02	MEAN	0.95	S.D.	0.04

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
6	RACK	B	1.3	38,000	FAR

PMAX	3.63	3.30	3.64	3.32	3.63	3.36	3.67	3.36	MEAN	3.49	S.D.	1.11
PEFF	2.59	2.26	2.66	2.31	2.73	2.37	2.79	2.42	MEAN	2.51	S.D.	0.82
DAF	0.71	0.68	0.73	0.70	0.75	0.71	0.76	0.72	MEAN	0.72	S.D.	0.03

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
6	RACK	B	1.5	40,500	NEAR

PMAX	3.08	2.63	2.89	2.57	2.85	2.54	2.91	2.56	MEAN	2.75	S.D.	0.89
PEFF	2.64	2.31	2.61	2.29	2.66	2.33	2.73	2.38	MEAN	2.49	S.D.	0.81
DAF	0.86	0.88	0.90	0.89	0.93	0.92	0.94	0.93	MEAN	0.91	S.D.	0.03

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
6	RACK	B	1.5	40,500	FAR

PMAX	3.35	3.09	3.41	3.14	3.39	3.13	3.47	3.13	MEAN	3.27	S.D.	1.04
PEFF	2.50	2.18	2.58	2.25	2.65	2.29	2.72	2.35	MEAN	2.44	S.D.	0.79
DAF	0.75	0.70	0.76	0.71	0.78	0.73	0.78	0.75	MEAN	0.75	S.D.	0.03

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
6	RACK	B	2.2	45,000	NEAR

PMAX	2.67	2.39	2.71	2.42	2.73	2.43	2.71	2.39	MEAN	2.56	S.D.	0.82
PEFF	2.16	1.89	2.22	1.93	2.26	1.97	2.29	1.98	MEAN	2.09	S.D.	0.68
DAF	0.81	0.79	0.82	0.80	0.83	0.81	0.85	0.83	MEAN	0.82	S.D.	0.02

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
6	RACK	B	2.2	45,000	FAR

PMAX	2.96	2.71	2.91	2.69	2.93	2.69	2.89	2.69	MEAN	2.80	S.D.	0.89
PEFF	2.23	1.95	2.30	2.00	2.37	2.06	2.39	2.06	MEAN	2.17	S.D.	0.79
DAF	0.78	0.72	0.79	0.74	0.81	0.76	0.82	0.76	MEAN	0.77	S.D.	0.03

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
6	RACK	B	2.7	59,000	NEAR

PMAX	2.18	1.90	2.19	1.90	2.20	1.90	2.23	1.92	MEAN	2.05	S.D.	0.64
PEFF	1.84	1.64	1.87	1.66	1.90	1.67	1.93	1.69	MEAN	1.78	S.D.	0.57
DAF	0.85	0.86	0.85	0.87	0.86	0.88	0.86	0.88	MEAN	0.87	S.D.	0.01

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
6	RACK	B	2.7	59,000	FAR

PMAX	2.12	2.03	2.12	2.01	2.14	2.02	2.15	2.03	MEAN	2.08	S.D.	0.66
PEFF	1.79	1.60	1.82	1.61	1.85	1.63	1.88	1.75	MEAN	1.74	S.D.	0.56
DAF	0.85	0.79	0.86	0.80	0.87	0.81	0.88	0.86	MEAN	0.84	S.D.	0.04

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	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD						
	7	PLATE	A	1.25	40,899	NEAR						
PMAX	3.18	2.15	3.16	2.09	3.14	2.03	3.13	1.98	MEAN	2.61	S.D.	1.06
PEFF	3.31	2.29	3.62	2.48	4.09	2.57	4.38	2.67	MEAN	3.18	S.D.	1.27
DAF	1.04	1.07	1.14	1.18	1.30	1.26	1.40	1.35	MEAN	1.22	S.D.	0.13

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD						
	7	PLATE	A	1.25	40,899	FAR						
PMAX	4.32	2.97	4.32	2.90	4.32	2.83	4.31	2.76	MEAN	3.59	S.D.	1.37
PEFF	5.77	4.02	5.83	3.89	5.89	3.89	5.87	3.85	MEAN	4.88	S.D.	1.84
DAF	1.34	1.35	1.35	1.34	1.36	1.38	1.36	1.40	MEAN	1.36	S.D.	0.02

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD						
	7	PLATE	A	1.5	44,599	NEAR						
PMAX	2.93	2.06	2.83	2.01	2.81	1.96	2.79	1.92	MEAN	2.41	S.D.	0.38
PEFF	3.96	3.11	3.73	2.98	3.65	2.89	3.73	2.78	MEAN	3.35	S.D.	1.15
DAF	1.35	1.51	1.32	1.49	1.30	1.47	1.34	1.45	MEAN	1.40	S.D.	0.08

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD						
	7	PLATE	A	1.5	44,599	FAR						
PMAX	4.07	2.63	4.05	2.44	4.04	2.38	4.02	2.32	MEAN	3.24	S.D.	1.33
PEFF	5.66	3.94	5.55	3.73	5.62	3.73	5.70	3.71	MEAN	4.70	S.D.	1.78
DAF	1.39	1.50	1.37	1.53	1.39	1.57	1.42	1.60	MEAN	1.47	S.D.	0.09

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD						
	7	PLATE	A	2.0	49,599	NEAR						
PMAX	3.61	2.28	3.59	2.10	3.58	2.04	3.56	2.00	MEAN	2.85	S.D.	1.19
PEFF	4.95	3.45	4.84	3.25	4.93	3.23	4.99	3.22	MEAN	4.11	S.D.	1.56
DAF	1.37	1.51	1.35	1.55	1.38	1.58	1.40	1.61	MEAN	1.47	S.D.	0.10

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD						
	7	PLATE	A	2.0	49,599	FAR						
PMAX	3.61	2.36	3.60	2.16	3.58	2.11	3.57	2.06	MEAN	2.88	S.D.	1.18
PEFF	5.03	3.54	4.93	3.35	4.99	3.33	5.05	3.32	MEAN	4.19	S.D.	1.57
DAF	1.39	1.50	1.37	1.55	1.39	1.58	1.42	1.61	MEAN	1.48	S.D.	0.10

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD						
	7	PLATE	A	2.7	65,000	NEAR						
PMAX	2.70	1.77	2.69	1.65	2.68	1.61	2.67	1.57	MEAN	2.17	S.D.	0.88
PEFF	3.79	2.66	3.72	2.52	3.75	2.52	3.82	2.51	MEAN	3.16	S.D.	1.19
DAF	1.40	1.50	1.38	1.53	1.40	1.56	1.43	1.60	MEAN	1.47	S.D.	0.08

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD						
	7	PLATE	A	2.7	65,000	FAR						
PMAX	2.65	1.71	2.64	1.58	2.63	1.53	2.62	1.50	MEAN	2.11	S.D.	0.87
PEFF	3.77	2.58	3.59	2.44	3.64	2.43	3.69	2.42	MEAN	3.06	S.D.	1.15
DAF	1.38	1.50	1.36	1.54	1.38	1.59	1.41	1.61	MEAN	1.47	S.D.	0.10

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ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
7	PLATE	B	1.3	38,000	NEAR

PMAX	2.79	1.81	2.78	1.75	2.78	1.72	2.78	1.71	MEAN	2.26	S.D. 0.90
PEFF	3.53	2.28	3.55	2.25	3.58	2.29	3.56	2.03	MEAN	2.88	S.D. 1.15
DAF	1.27	1.26	1.27	1.28	1.29	1.33	1.28	1.19	MEAN	1.27	S.D. 0.04

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
7	PLATE	B	1.3	38,000	FAR

PMAX	4.31	2.82	4.31	2.75	4.30	2.67	4.30	2.60	MEAN	3.51	S.D. 1.39
PEFF	5.62	3.75	5.66	3.62	5.71	3.61	5.6[illegible]	3.56	MEAN	4.65	S.D. 1.32
DAF	1.30	1.33	1.32	1.32	1.33	1.35	1.32	1.37	MEAN	1.33	S.D. 0.02

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
7	PLATE	B	1.5	40,500	NEAR

PMAX	2.57	1.81	2.56	1.75	2.55	1.71	2.53	1.69	MEAN	2.15	S.D. 0.80
PEFF	3.62	2.83	3.52	2.54	3.48	2.48	3.52	2.38	MEAN	3.05	S.D. 1.1[illegible]
DAF	1.41	1.57	1.38	1.45	1.37	1.45	1.39	1.41	MEAN	1.43	S.D. 0.06

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
7	PLATE	B	1.5	40,500	FAR

PMAX	4.04	2.53	4.02	2.33	4.01	2.27	[illegible].99	2.22	MEAN	3.18	S.D. 1.34
PEFF	5.52	3.75	5.40	3.53	5.51	3.54	5.58	3.52	MEAN	4.54	S.D. 1.75
DAF	1.37	1.48	1.34	1.51	1.37	1.56	1.40	1.59	MEAN	1.45	S.D. [illegible]

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
7	PLATE	B	2.2	45,000	NEAR

PMAX	3.41	2.32	3.40	2.17	3.38	2.12	3.37	2.07	MEAN	2.78	S.D. 1.[illegible]
PEFF	4.87	3.46	4.78	3.28	4.81	3.28	4.58	3.27	MEAN	4.08	S.D. 1.[illegible]
DAF	1.43	1.49	1.41	1.51	1.42	1.55	1.45	1.58	MEAN	1.48	S.D. 0.[illegible]

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
7	PLATE	B	2.2	45,000	FAR

PMAX	3.66	2.23	3.64	2.09	3.63	2.04	3.61	1.99	MEAN	2.85	S.D. 1.[illegible]
PEFF	4.95	3.27	4.84	3.10	4.86	3.11	5.32	3.08	MEAN	4.04	S.D. 1.[illegible]
DAF	1.35	1.46	1.33	1.48	1.37	1.52	1.39	1.55	MEAN	1.43	S.D. [illegible]

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
7	PLATE	B	2.7	50,000	NEAR

PMAX	2.74	1.77	2.73	1.68	2.72	1.69	2.71	1.65	MEAN	2.18	S.D. [illegible]
PEFF	3.83	2.66	3.72	2.51	3.77	2.50	3.93	2.50	MEAN	3.15	S.D. 1.[illegible]
DAF	1.39	1.50	1.37	1.54	1.39	1.57	1.41	1.51	MEAN	1.47	S.D. [illegible]

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
7	PLATE	B	2.7	50,000	FAR

PMAX	2.54	1.69	2.53	1.54	2.52	1.51	2.51	1.49	MEAN	2.09	S.D. [illegible]
PEFF	3.54	2.58	3.55	2.40	3.52	2.39	3.56	2.38	MEAN	3.05	S.D. 1.[illegible]
DAF	1.39	1.50	1.35	1.55	1.38	1.59	1.40	1.51	MEAN	1.47	S.D. [illegible]

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	ELEMENT #	TYPE PLATE	CONTRACTOR A	MACH 1.25	ALTITUDE 40,899	FIELD NEAR			
PMAX	2.75	1.91	2.72	1.85	2.94	1.85	2.91	1.8[illegible]	MEAN 2.35 S.D. 0.90
PEFF	3.0[illegible]	2.[illegible]3	3.33	2.34	3.88	2.60	4.29	2.73	MEAN 3.06 S.D. 1.21
DAF	1.12	1.17	1.22	1.27	1.32	1.40	1.47	1.49	MEAN 1.31 S.D. 0.14

	ELEMENT #	TYPE PLATE	CONTRACTOR A	MACH 1.25	ALTITUDE 40,899	FIELD FAR			
PMAX	3.83	2.42	3.80	2.38	4.02	2.45	4.00	2.39	MEAN 3.16 S.D. 1.28
PEFF	5.23	3.42	5.33	3.68	5.66	3.82	5.75	3.82	MEAN 4.65 S.D. 1.73
DAF	1.39	1.[illegible]9	1.40	1.55	1.41	1.[illegible]6	1.44	1.60	MEAN 1.49 S.D. 0.09

	ELEMENT #	TYPE PLATE	CONTRACTOR A	MACH 1.50	ALTITUDE 44,599	FIELD NEAR			
PMAX	2.58	1.84	2.46	1.80	2.42	1.76	2.40	1.72	MEAN 2.12 S.D. 0.76
PEFF	3.49	2.77	3.30	2.72	3.13	2.62	3.04	2.51	MEAN 2.95 S.D. 0.99
DAF	1.35	1.50	1.34	1.51	[illegible] 31	1.49	1.27	1.45	MEAN 1.40 S.D. 0.09

	ELEMENT #	TYPE PLATE	CONTRACTOR A	MACH 1.50	ALTITUDE 44,599	FIELD FAR			
PMAX	3.53	[illegible]	3.49	2.26	3.44	2.21	3.40	2.17	MEAN 2.85 S.D. 1.11
PEFF	4.83	3.[illegible]	4.65	3.27	4.62	3.[illegible]	4.58	3.20	MEAN 3.99 S.D. 1.45
DAF	1.37	1.[illegible]	1.34	1.45	1.34	1.47	1.3[illegible]	1.48	MEAN 1.41 S.D. 0.07

	ELEMENT #	TYPE PLATE	CONTRACTOR A	MACH 2.00	ALTITUDE 49,599	FIELD NEAR			
PMAX	2.91	1.[illegible]	2.72	1.[illegible]	2.71	1.[illegible]	3.01	1.88	MEAN 2.37 S.D. 0.90
PEFF	3.72	2.[illegible]	3.54	2.[illegible]	3.40	2.[illegible]	4.03	2.80	MEAN 3.18 S.D. 1.14
DAF	1.27	1.[illegible]	1.30	1.41	1.2[illegible]	1.3[illegible]	1.34	1.49	MEAN 1.36 S.D. 0.08

	ELEMENT #	TYPE PLATE	CONTRACTOR A	MACH 2.00	ALTITUDE 49,599	FIELD FAR			
PMAX	2.[illegible]	1.[illegible]	2.[illegible]	1.95	2.72	1.[illegible]	3.04	1.84	MEAN 2.40 S.D. 0.90
PEFF	3.[illegible]	2.[illegible]	3.[illegible]	2.75	3.[illegible]	2.[illegible]	4.[illegible]	2.87	MEAN 3.24 S.D. 1.15
DAF	1.2[illegible]	1.[illegible]	1.31	1.41	1.27	1.37	1.34	1.48	MEAN 1.36 S.D. 0.07

	ELEMENT #	TYPE PLATE	CONTRACTOR A	MACH 2.70	ALTITUDE 65,900	FIELD NEAR			
PMAX	2.[illegible]	1.[illegible]	2.[illegible]	1.[illegible]	2.[illegible]	1.[illegible]	2.[illegible]	1.43	MEAN 1.74 S.D. 0.62
PEFF	2.[illegible]	1.[illegible]	2.[illegible]	2.[illegible]	2.59	2.[illegible]	2.60	1.[illegible]	MEAN 2.26 S.D. 0.78
DAF	1.1[illegible]	1.[illegible]	1.[illegible]	1.[illegible]	1.[illegible]	1.[illegible]	1.[illegible]	1.35	MEAN 1.[illegible] S.D. 0.08

	ELEMENT #	TYPE PLATE	CONTRACTOR A	MACH 2.70	ALTITUDE 65,900	FIELD FAR			
PMAX	1.[illegible]	1.[illegible]	2.[illegible]	1.[illegible]	2.[illegible]	1.[illegible]	2.[illegible]	1.[illegible]	MEAN 1.[illegible] S.D. 0.63
PEFF	2.[illegible]	1.[illegible]	2.[illegible]	2.[illegible]	2.[illegible]	1.[illegible]	2.[illegible]	1.[illegible]	MEAN 2.[illegible] S.D. 0.77
DAF	1.[illegible]	1.[illegible]	1.[illegible]	1.[illegible]	1.[illegible]	1.[illegible]	1.[illegible]	1.[illegible]	MEAN 1.[illegible] S.D. 0.08

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ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
	PLATE	P	1.3	38,000	NEAR					
PMAX	2.[illegible] 1.73	2.34 1.68	2.32 1.65	2.30 1.63	MEAN	2.00	S.D.	0.72		
PEFF	3.1[illegible] 2.09	3.17 2.00	3.15 2.03	3.12 1.93	MEAN	2.59	S.D.	1.01		
DAF	1.3[illegible] 1.21	1.36 1.19	1.36 1.24	1.36 1.18	MEAN	1.28	S.D.	0.08		

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
	PLATE	P	1.3	38,000	FAR					
PMAX	3.72 2.24	3.69 2.20	3.66 2.16	3.63 2.11	MEAN	2.93	S.D.	1.22		
PEFF	5.13 3.58	5.12 3.43	5.10 3.37	5.01 3.31	MEAN	4.26	S.D.	1.61		
DAF	1.38 1.60	1.39 1.56	1.39 1.56	1.38 1.56	MEAN	1.48	S.D.	0.10		

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
	PLATE	P	1.5	40,500	NEAR					
PMAX	2.26 1.73	2.24 1.68	2.21 1.64	2.19 1.62	MEAN	1.94	S.D.	0.68		
PEFF	3.26 2.59	3.17 2.30	3.08 2.24	2.95 2.16	MEAN	2.72	S.D.	0.96		
DAF	1.44 1.50	1.42 1.37	1.39 1.37	1.35 1.33	MEAN	1.40	S.D.	0.05		

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
	PLATE	P	1.5	40,500	FAR					
PMAX	3.43 2.17	3.39 2.12	3.34 2.07	3.30 2.03	MEAN	2.73	S.D.	1.09		
PEFF	4.85 3.33	4.49 3.12	4.49 3.10	4.44 3.05	MEAN	3.84	S.D.	1.41		
DAF	1.37 1.54	1.33 1.47	1.34 1.49	1.35 1.50	MEAN	1.42	S.D.	0.09		

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
	PLATE	P	2.2	45,000	NEAR					
PMAX	2.75 1.81	2.60 1.87	2.59 1.83	2.58 1.79	MEAN	2.24	S.D.	0.82		
PEFF	3.52 2.70	3.43 2.65	3.30 2.54	3.17 2.42	MEAN	2.97	S.D.	1.03		
DAF	1.2[illegible] 1.[illegible]	1.32 1.42	1.27 1.39	1.23 1.35	MEAN	1.33	S.D.	0.07		

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
	PLATE	P	2.2	45,000	FAR					
PMAX	2.[illegible] 1.[illegible]	2.[illegible] 1.77	2.[illegible] 1.73	2.[illegible] 1.70	MEAN	2.21	S.D.	2.[illegible]		
PEFF	3.[illegible] 2.[illegible]	3.[illegible] 2.[illegible]	3.[illegible] 2.[illegible]	3.21 2.[illegible]	MEAN	2.[illegible]	S.D.	1.[illegible]		
DAF	1.2[illegible] 1.[illegible]	1.[illegible] 1.[illegible]	1.[illegible] 1.[illegible]	1.2[illegible] 1.[illegible]	MEAN	1.[illegible]	S.D.	[illegible]		

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
	PLATE	P	2.7	53,000	NEAR					
PMAX	[illegible] 1.[illegible]	[illegible] 1.[illegible]	[illegible] 1.[illegible]	[illegible] 1.[illegible]	MEAN	1.[illegible]	S.D.	[illegible]		
PEFF	[illegible] 1.[illegible]	[illegible] [illegible]	[illegible] 1.[illegible]	[illegible] 1.[illegible]	MEAN	[illegible]	S.D.	[illegible]		
DAF	1.[illegible] 1.[illegible]	1.[illegible] 1.[illegible]	1.[illegible] 1.[illegible]	1.[illegible] 1.[illegible]	MEAN	1.[illegible]	S.D.	[illegible]		

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
	PLATE	P	2.7	53,000	FAR					
PMAX	1.[illegible] 1.[illegible]	[illegible] 1.[illegible]	[illegible] 1.[illegible]	[illegible] 1.[illegible]	MEAN	[illegible]	S.D.	[illegible]		
PEFF	[illegible] 1.[illegible]	[illegible] 1.[illegible]	[illegible] 1.[illegible]	[illegible] 1.[illegible]	MEAN	[illegible]	S.D.	[illegible]		
DAF	1.[illegible] 1.[illegible]	1.[illegible] 1.[illegible]	1.[illegible] 1.[illegible]	1.[illegible] 1.[illegible]	MEAN	1.[illegible]	S.D.	[illegible]		

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ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
C	FIGHTER	A	1.25	40,000	NEAR					
PMAX 1.70	1.70	1.65	1.57	1.58	1.48	2.22	1.43	MEAN	1.68	S.D. 0.26
PEFF 2.94	3.00	2.64	3.01	2.79	2.83	3.60	2.59	MEAN	2.84	S.D. 0.31
EAF 1.73	1.76	1.74	1.92	1.66	1.91	1.17	1.81	MEAN	1.71	S.D. 0.24

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
C	FIGHTER	A	1.25	40,000	FAR					
PMAX 2.60	1.58	2.58	2.00	2.95	1.56	3.45	1.97	MEAN	2.39	S.D. 0.61
PEFF 4.06	3.93	4.34	3.20	3.37	2.65	3.51	3.70	MEAN	3.34	S.D. 1.17
EAF 1.58	1.58	1.30	1.60	1.32	1.74	1.03	1.37	MEAN	1.44	S.D. 0.28

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
C	FIGHTER	A	1.5	44,000	NEAR					
PMAX 1.79	1.55	1.77	1.48	1.72	1.41	1.55	1.57	MEAN	1.64	S.D. 0.55
PEFF 2.46	2.50	4.32	2.91	3.21	3.03	3.07	2.78	MEAN	2.97	S.D. 0.94
EAF 1.33	1.57	1.75	1.57	1.98	2.14	1.57	2.03	MEAN	1.78	S.D. 0.27

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
C	FIGHTER	A	1.5	44,000	FAR					
PMAX 2.46	1.65	2.37	1.71	2.34	1.59	2.38	1.74	MEAN	2.13	S.D. 0.74
PEFF 4.13	3.65	4.75	3.54	3.18	2.79	3.32	3.40	MEAN	3.56	S.D. 1.21
EAF 1.72	2.13	1.40	2.07	1.35	1.68	1.13	1.62	MEAN	1.69	S.D. 0.33

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
C	[illegible]	A	2.0	45,000	NEAR					
PMAX 2.03	1.91	2.30	1.49	2.21	1.47	2.42	1.51	MEAN	1.92	S.D. 0.48
PEFF 2.78	2.94	3.71	2.96	2.99	2.78	2.92	2.95	MEAN	2.92	S.D. 0.91
EAF 1.37	1.71	1.67	1.85	1.47	1.85	1.19	1.63	MEAN	1.59	S.D. 0.28

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
C	[illegible]	A	2.0	45,000	FAR					
PMAX 2.13	1.97	2.25	1.58	2.22	1.62	2.48	1.67	MEAN	[illegible]	S.D. [illegible]
PEFF [illegible]	[illegible]	[illegible]	3.25	3.38	[illegible]	3.32	[illegible]	MEAN	3.14	S.D. 1.12
EAF 1.47	2.14	1.78	2.07	1.41	1.85	1.21	1.49	MEAN	1.74	S.D. 0.37

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
C	[illegible]	A	[illegible]	[illegible]	NEAR					
PMAX [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	MEAN	[illegible]	S.D. [illegible]
PEFF [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2.36	[illegible]	MEAN	[illegible]	S.D. [illegible]
EAF [illegible]	[illegible]	[illegible]	1.45	1.37	1.44	[illegible]	[illegible]	MEAN	1.37	S.D. [illegible]

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
C	[illegible]	A	[illegible]	[illegible]	FAR					
PMAX [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	MEAN	[illegible]	S.D. [illegible]
PEFF [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	MEAN	[illegible]	S.D. [illegible]
EAF [illegible]	[illegible]	[illegible]	1.27	1.41	[illegible]	[illegible]	[illegible]	MEAN	1.40	S.D. [illegible]

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ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
	C	ROOF	B	1.2	38,000	NEAR				
PMAX	1.[illegible]	1.91	1.87	1.40	1.59	1.[illegible]	2.1[illegible]	1.81	MEAN	1.55	S.D.	[illegible].56
PEFF	2.19	2.32	2.58	2.55	2.77	2.6[illegible]	2.65	2.52	MEAN	[illegible].53	S.D.	0.82
EAF	1.45	1.53	1.65	1.81	1.74	1.97	1.2[illegible]	1.92	MEAN	1.66	S.D.	0.25

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
	C	ROOF	B	1.2	38,000	FAR				
PMAX	2.32	1.64	2.47	1.82	2.51	1.79	3.41	1.77	MEAN	2.24	S.D.	0.90
PEFF	2.91	2.65	3.00	2.98	3.64	3.46	3.91	3.59	MEAN	3.27	S.D.	1.12
EAF	1.25	1.44	1.22	1.64	1.45	1.93	1.14	2.03	MEAN	1.51	S.D.	0.33

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
	C	ROOF	B	1.5	40,500	NEAR				
PMAX	1.56	1.56	1.49	1.44	1.47	1.36	1.67	1.33	MEAN	1.49	S.D.	0.48
PEFF	2.25	2.05	2.22	2.08	2.44	2.38	2.76	2.60	MEAN	2.35	S.D.	0.78
EAF	1.44	1.31	1.49	1.44	1.65	1.75	1.66	1.98	MEAN	1.59	S.D.	0.21

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
	C	ROOF	B	1.5	40,500	FAR				
PMAX	2.29	1.78	2.28	1.65	2.23	1.56	2.76	1.61	MEAN	2.02	S.D.	0.77
PEFF	2.92	2.69	2.93	2.45	2.94	2.67	3.33	3.07	MEAN	2.88	S.D.	0.94
EAF	1.27	1.51	1.28	1.49	1.32	1.71	1.21	1.91	MEAN	1.46	S.D.	0.24

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
	C	ROOF	B	2.2	45,000	NEAR				
PMAX	2.17	1.44	2.14	1.40	2.12	1.37	2.27	1.50	MEAN	1.80	S.D.	0.59
PEFF	2.67	2.56	2.67	2.14	2.69	2.03	2.81	2.09	MEAN	2.46	S.D.	0.83
EAF	1.23	1.78	1.25	1.53	1.27	1.48	1.24	1.39	MEAN	1.40	S.D.	0.19

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
	C	ROOF	B	2.2	45,000	FAR				
PMAX	2.04	1.71	2.01	1.57	1.98	1.47	2.50	1.41	MEAN	1.84	S.D.	0.58
PEFF	2.78	2.65	2.55	2.35	2.55	2.1[illegible]	2.71	2.53	MEAN	2.54	S.D.	0.82
EAF	1.37	1.55	1.27	1.49	1.28	1.48	1.08	1.80	MEAN	1.42	S.D.	0.22

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
	C	ROOF	B	2.7	59,000	NEAR				
PMAX	1.62	1.19	1.60	1.13	1.58	1.11	1.87	1.18	MEAN	1.41	S.D.	0.53
PEFF	2.13	2.07	2.26	2.18	2.16	1.93	2.24	1.69	MEAN	2.08	S.D.	0.69
EAF	1.31	1.80	1.41	1.93	1.37	1.73	1.20	1.43	MEAN	1.52	S.D.	0.26

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
	C	ROOF	B	2.7	59,000	FAR				
PMAX	1.91	1.25	1.49	1.1[illegible]	1.48	1.05	1.78	1.15	MEAN	1.36	S.D.	0.49
PEFF	2.48	2.48	2.02	2.01	2.04	1.68	2.14	1.85	MEAN	2.08	S.D.	0.71
EAF	1.64	1.96	1.35	1.74	1.38	1.54	1.20	1.60	MEAN	1.55	S.D.	0.24

[redacted]

	ELEMENT IC	TYPE [illegible]	CONTRACTOR A	MACH 1.25	ALTITUDE 40,999	FIELD NEAR			
PMAX	1.43	1.44	1.54	1.54	1.46	1.46	1.43	1.42	MEAN 1.51 S.D. 0.48
PEFF	2.35	2.36	2.37	[illegible]	1.84	1.76	1.64	1.47	MEAN 1.91 S.D. 0.66
CAF	1.41	1.45	1.54	1.27	1.27	1.17	1.14	1.04	MEAN 1.26 S.D. 0.12

	ELEMENT IC	TYPE [illegible]	CONTRACTOR A	MACH 1.25	ALTITUDE 40,899	FIELD FAR			
PMAX	1.81	1.81	1.76	1.76	1.75	1.61	1.75	1.58	MEAN 1.72 S.D. 0.55
PEFF	3.01	2.91	2.82	2.71	2.55	2.43	2.32	2.15	MEAN 2.62 S.D. 0.88
CAF	1.64	1.61	1.61	1.60	1.47	1.51	1.33	1.36	MEAN 1.52 S.D. 0.13

	ELEMENT IC	TYPE [illegible]	CONTRACTOR A	MACH 1.50	ALTITUDE 44,599	FIELD NEAR			
PMAX	1.48	1.49	1.41	1.41	1.34	1.34	1.33	1.33	MEAN 1.39 S.D. 0.44
PEFF	2.03	2.00	1.93	1.87	1.75	1.69	1.59	1.51	MEAN 1.80 S.D. 0.60
CAF	1.37	1.35	1.36	1.33	1.30	1.25	1.20	1.14	MEAN 1.29 S.D. 0.08

	ELEMENT IC	TYPE [illegible]	CONTRACTOR A	MACH 1.50	ALTITUDE 44,599	FIELD FAR			
PMAX	1.74	1.74	1.79	1.65	1.75	1.57	1.74	1.55	MEAN 1.69 S.D. 0.54
PEFF	2.85	2.78	2.71	2.61	2.48	2.35	2.24	2.09	MEAN 2.51 S.D. 0.84
CAF	1.62	1.59	1.55	1.58	1.42	1.49	1.29	1.35	MEAN 1.49 S.D. 0.12

	ELEMENT IC	TYPE [illegible]	CONTRACTOR A	MACH 2.00	ALTITUDE 49,599	FIELD NEAR			
PMAX	1.60	1.44	1.46	1.28	1.30	1.21	1.59	1.18	MEAN 1.43 S.D. 0.49
PEFF	1.99	1.91	1.82	1.76	1.73	1.65	1.59	1.50	MEAN 1.74 S.D. 0.57
CAF	1.22	1.40	1.14	1.40	1.08	1.36	1.00	1.27	MEAN 1.23 S.D. 0.15

	ELEMENT IC	TYPE [illegible]	CONTRACTOR A	MACH 2.00	ALTITUDE 49,599	FIELD FAR			
PMAX	1.58	1.55	1.59	1.44	1.47	1.39	1.57	1.37	MEAN 1.51 S.D. 0.48
PEFF	2.40	2.35	2.23	2.15	2.09	1.99	1.89	1.77	MEAN 2.11 S.D. 0.70
CAF	1.52	1.52	1.41	1.50	1.33	1.43	1.21	1.30	MEAN 1.40 S.D. 0.11

	ELEMENT IC	TYPE [illegible]	CONTRACTOR A	MACH 2.70	ALTITUDE 65,000	FIELD NEAR			
PMAX	1.38	1.38	1.31	1.31	1.20	1.20	1.18	1.14	MEAN 1.26 S.D. 0.41
PEFF	2.42	2.40	2.38	2.34	2.24	2.19	2.37	2.28	MEAN 2.33 S.D. 0.74
CAF	1.75	1.73	1.82	1.79	1.86	1.82	2.01	2.00	MEAN 1.85 S.D. 0.11

	ELEMENT IC	TYPE [illegible]	CONTRACTOR A	MACH 2.70	ALTITUDE 65,000	FIELD FAR			
PMAX	1.48	1.48	1.39	1.39	1.27	1.27	1.19	1.19	MEAN 1.33 S.D. 0.44
PEFF	2.72	2.69	2.63	2.58	2.42	2.35	2.29	2.19	MEAN 2.48 S.D. 0.81
CAF	1.83	1.81	1.85	1.86	1.90	1.85	1.92	1.84	MEAN 1.86 S.D. 0.04

[redacted]

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
IC	ROOF	B	1.3	38,000	NEAR

PMAX	1.45	1.45	1.34	1.34	1.28	1.28	1.26	1.26	MEAN	1.33	S.D.	0.43
PEFF	1.75	1.73	1.59	1.55	1.43	1.36	1.27	1.19	MEAN	1.48	S.D.	0.51
DAF	1.21	1.20	1.19	1.18	1.12	1.06	1.01	0.95	MEAN	1.11	S.D.	0.09

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
IC	ROOF	B	1.3	38,000	FAR

PMAX	1.78	1.78	1.74	1.65	1.73	1.57	1.72	1.55	MEAN	1.69	S.D.	0.54
PEFF	2.49	2.49	2.33	2.30	2.16	2.10	1.99	1.90	MEAN	2.22	S.D.	0.73
DAF	1.40	1.40	1.34	1.39	1.25	1.34	1.15	1.23	MEAN	1.31	S.D.	0.09

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
IC	ROOF	B	1.5	40,500	NEAR

PMAX	1.44	1.44	1.36	1.36	1.28	1.28	1.25	1.25	MEAN	1.33	S.D.	0.43
PEFF	1.72	1.72	1.63	1.61	1.50	1.46	1.39	1.33	MEAN	1.54	S.D.	0.51
DAF	1.20	1.19	1.20	1.18	1.17	1.14	1.11	1.06	MEAN	1.16	S.D.	0.05

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
IC	ROOF	B	1.5	40,500	FAR

PMAX	1.79	1.66	1.74	1.56	1.73	1.48	1.73	1.45	MEAN	1.64	S.D.	0.53
PEFF	2.19	2.20	2.11	2.10	1.97	1.93	1.82	1.76	MEAN	2.01	S.D.	0.65
DAF	1.29	1.33	1.21	1.34	1.13	1.30	1.06	1.21	MEAN	1.23	S.D.	0.10

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
IC	ROOF	B	2.2	45,000	NEAR

PMAX	1.50	1.35	1.50	1.25	1.49	1.20	1.49	1.17	MEAN	1.37	S.D.	0.45
PEFF	1.66	1.68	1.57	1.57	1.52	1.50	1.44	1.41	MEAN	1.54	S.D.	0.50
DAF	1.11	1.24	1.05	1.26	1.02	1.25	0.97	1.20	MEAN	1.14	S.D.	0.12

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
IC	ROOF	B	2.2	45,000	FAR

PMAX	1.58	1.56	1.57	1.44	1.57	1.37	1.56	1.32	MEAN	1.50	S.D.	0.48
PEFF	2.05	2.08	1.93	1.94	1.85	1.83	1.72	1.68	MEAN	1.88	S.D.	0.61
DAF	1.30	1.33	1.22	1.34	1.18	1.34	1.10	1.28	MEAN	1.26	S.D.	0.09

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
IC	ROOF	B	2.7	59,000	NEAR

PMAX	1.21	0.97	1.20	0.92	1.20	0.90	1.19	0.88	MEAN	1.06	S.D.	0.37
PEFF	1.43	1.29	1.37	1.32	1.26	1.20	1.20	1.13	MEAN	1.29	S.D.	0.42
DAF	1.19	1.43	1.14	1.44	1.05	1.34	1.00	1.28	MEAN	1.23	S.D.	0.17

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
IC	ROOF	B	2.7	59,000	FAR

PMAX	1.17	1.13	1.17	1.06	1.17	1.00	1.16	0.99	MEAN	1.11	S.D.	0.36
PEFF	1.86	1.80	1.75	1.67	1.59	1.49	1.46	1.35	MEAN	1.62	S.D.	0.54
DAF	1.59	1.59	1.50	1.57	1.37	1.49	1.26	1.36	MEAN	1.46	S.D.	0.12

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
11	PLATE	A	1.25	40,899	NEAR

PMAX	3.18	2.(	3.16	1.93	3.14	1.88	3.13	1.86	MEA..	2.54	S.D.	1.0:
PEFF	4.56	2.07	6.46	2.07	5.77	2.11	7.40	2.02	MEAN	4.06	S.D.	2.5:
DAF	1.43	1.04	2.04	1.07	1.83	1.12	2.36	1.08	MEAN	1.50	S.D.	0.5:

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
11	PLATE	A	1.25	40,899	FAR

PMAX	4.32	2.23	4.32	2.22	4.32	2.21	4.31	2.20	MEAN	3.27	S.D.	1.5:
PEFF	7.37	3.4(	7.46	3.38	7.42	3.23	7.91	2.68	MEAN	5.37	S.D.	2.8(
DAF	1.71	1.57	1.73	1.52	1.72	1.46	1.83	1.22	MEAN	1.59	S.D.	0.2(

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
11	PLATE	A	1.50	44,599	NEAR

PMAX	2.80	1.87	2.78	1.81	2.76	1.78	2.74	1.77	MEAN	2.29	S.D.	0.8(
PEFF	4.30	1.99	5.3(	1.78	4.98	1.84	5.23	1.70	MEAN	3.39	S.D.	2.0(
DAF	1.54	1.06	1.92	0.98	1.80	1.03	1.91	0.96	MEAN	1.40	S.D.	0.4(

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
11	PLATE	A	1.50	44,599	FAR

PMAX	3.99	2.19	3.97	2.12	3.95	2.08	3.93	2.07	MEAN	3.04	S.D.	1.3(
PEFF	6.33	3.05	6.37	2.93	6.19	2.75	6.29	2.01	MEAN	4.49	S.D.	2.3(
DAF	1.59	1.39	1.60	1.38	1.57	1.32	1.60	0.97	MEAN	1.43	S.D.	0.2:

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
11	PLATE	A	2.00	49,599	NEAR

PMAX	3.53	1.79	3.51	1.78	3.49	1.76	3.48	1.75	MEAN	2.64	S.D.	1.2(
PEFF	5.55	2.60	5.38	2.49	5.52	2.33	5.60	1.67	MEAN	3.89	S.D.	2.1:
DAF	1.57	1.46	1.53	1.40	1.58	1.32	1.61	0.95	MEAN	1.43	S.D.	0.2:

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
11	PLATE	A	2.00	49,599	FAR

PMAX	3.54	1.97	3.52	1.91	3.50	1.88	3.48	1.85	MEAN	2.71	S.D.	1.2(
PEFF	5.68	2.69	5.37	2.58	5.52	2.42	5.60	1.76	MEAN	3.95	S.D.	2.1:
DAF	1.61	1.36	1.53	1.35	1.58	1.29	1.61	0.95	MEAN	1.41	S.D.	0.2:

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
11	PLATE	A	2.70	65,000	NEAR

PMAX	2.65	1.50	2.64	1.44	2.62	1.39	2.61	1.38	MEAN	2.03	S.D.	0.9(
PEFF	4.22	2.07	4.01	1.99	4.12	1.88	4.18	1.38	MEAN	2.98	S.D.	1.5:
DAF	1.59	1.37	1.52	1.38	1.57	1.35	1.60	1.00	MEAN	1.42	S.D.	0.2(

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
11	PLATE	A	2.70	65,000	FAR

PMAX	2.60	1.65	2.58	1.58	2.57	1.52	2.56	1.47	MEAN	2.07	S.D.	0.8:
PEFF	4.08	1.93	3.95	1.85	4.06	1.74	4.12	1.36	MEAN	2.89	S.D.	1.5(
DAF	1.57	1.17	1.53	1.17	1.58	1.14	1.61	0.93	MEAN	1.34	S.D.	0.2(

[redacted]

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
11	PLATE	B	1.3	38,000	NEAR

PMAX	2.79	1.81	2.78	1.75	2.78	1.72	2.78	1.71	MEAN	2.26	S.D. 0.[illegible]
PEFF	4.70	2.01	4.75	1.86	4.93	1.77	5.05	1.62	MEAN	3.34	S.D. 1.9[illegible]
DAF	[illegible]	1.11	1.70	1.06	1.77	1.03	1.82	0.95	MEAN	1.39	S.D. 0.3[illegible]

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
11	PLATE	B	1.3	38,000	FAR

PMAX	4.31	2.20	4.31	2.14	4.30	2.10	4.30	2.08	MEAN	3.22	S.D. 1.5[illegible]
PEFF	7.32	3.24	7.40	3.12	7.36	2.97	8.22	2.43	MEAN	5.26	S.D. 2.9[illegible]
DAF	1.70	1.47	1.72	1.46	1.71	1.42	1.91	1.17	MEAN	1.57	S.D. 0.2[illegible]

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
11	PLATE	B	1.5	40,500	NEAR

PMAX	2.52	1.81	2.50	1.75	2.49	1.71	2.47	1.69	MEAN	2.12	S.D. 0.7[illegible]
PEFF	5.62	2.34	5.44	2.23	4.96	2.10	5.50	1.52	MEAN	3.71	S.D. 2.1[illegible]
DAF	2.23	1.29	2.17	1.27	2.00	1.23	2.23	0.90	MEAN	1.67	S.D. 0.5[illegible]

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
11	PLATE	B	1.5	40,500	FAR

PMAX	3.96	2.06	3.94	1.99	3.91	1.95	3.89	1.93	MEAN	2.96	S.D. 1.0[illegible]
PEFF	6.25	2.91	5.99	2.78	6.15	2.60	6.24	1.85	MEAN	4.35	S.D. 2.3[illegible]
DAF	1.58	1.41	1.52	1.39	1.57	1.33	1.60	0.96	MEAN	1.42	S.D. 0.2[illegible]

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
11	PLATE	B	2.2	45,000	NEAR

PMAX	3.34	1.85	3.32	1.84	3.30	1.83	3.29	1.82	MEAN	2.57	S.D. 1.1[illegible]
PEFF	5.34	2.71	5.08	2.62	5.22	2.47	5.29	1.85	MEAN	3.82	S.D. 1.9[illegible]
DAF	1.60	1.47	1.53	1.42	1.58	1.3[illegible]	1.61	1.02	MEAN	1.45	S.D. 0.2[illegible]

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
11	PLATE	B	2.2	45,000	FAR

PMAX	3.58	1.95	3.56	1.88	3.54	1.83	3.52	1.81	MEAN	2.71	S.D. 1.2[illegible]
PEFF	6.65	2.61	6.04	2.49	5.56	2.33	6.22	1.65	MEAN	4.07	S.D. 2.3[illegible]
DAF	1.58	1.34	1.70	1.32	1.57	1.27	1.76	0.91	MEAN	1.43	S.D. 0.2[illegible]

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
11	PLATE	B	2.7	59,000	NEAR

PMAX	2.68	1.40	2.67	1.36	2.65	1.38	2.64	1.37	MEAN	2.02	S.D. 0.3[illegible]
PEFF	4.24	2.03	4.07	1.95	4.13	1.83	4.24	1.33	MEAN	2.98	S.D. 1.5[illegible]
DAF	1.58	1.46	1.52	1.40	1.57	1.33	1.61	0.97	MEAN	1.43	S.D. 0.2[illegible]

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
11	PLATE	B	2.7	59,000	FAR

PMAX	2.59	1.46	2.58	1.41	2.56	1.38	2.55	1.36	MEAN	1.99	S.D. 0.8[illegible]
PEFF	4.05	1.91	3.94	1.83	4.05	1.71	4.10	1.23	MEAN	2.85	S.D. 1.5[illegible]
DAF	1.57	1.31	1.53	1.30	1.58	1.24	1.61	0.90	MEAN	1.38	S.D. 0.24

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ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
12	PLATE	A	1.25	40,899	NEAR

PMAX	2.63	1.79	2.60	1.68	2.57	1.60	2.55	1.57	MEAN	2.12	S.D.	0.8
PEFF	4.08	3.72	4.26	3.88	4.05	3.74	3.44	3.33	MEAN	3.81	S.D.	1.2
DAF	1.55	2.08	1.64	2.31	1.58	2.33	1.35	2.12	MEAN	1.87	S.D.	0.3

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
12	PLATE	A	1.25	40,899	FAR

PMAX	3.79	2.12	3.78	2.11	3.77	2.09	3.77	2.08	MEAN	2.94	S.D.	1.2
PEFF	5.93	5.45	5.94	5.35	5.33	4.73	4.10	3.65	MEAN	5.06	S.D.	1.7
DAF	1.57	2.57	1.57	2.54	1.41	2.26	1.09	1.76	MEAN	1.85	S.D.	0.5

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
12	PLATE	A	1.50	44,599	NEAR

PMAX	2.43	1.65	2.41	1.55	2.38	1.49	2.35	1.48	MEAN	1.97	S.D.	0.7
PEFF	3.40	3.01	3.47	3.39	4.21	4.00	4.55	4.25	MEAN	3.79	S.D.	1.3
DAF	1.40	1.82	1.44	2.19	1.77	2.68	1.94	2.88	MEAN	2.01	S.D.	0.5

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
12	PLATE	A	1.50	44,599	FAR

PMAX	3.49	1.95	3.48	1.92	3.46	1.90	3.44	1.88	MEAN	2.69	S.D.	1.1
PEFF	5.41	4.99	5.79	5.23	5.65	4.98	4.86	4.25	MEAN	5.15	S.D.	1.6
DAF	1.55	2.56	1.67	2.73	1.63	2.63	1.42	2.27	MEAN	2.06	S.D.	0.5

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
12	PLATE	A	2.00	49,599	NEAR

PMAX	3.09	1.65	3.08	1.64	3.06	1.62	3.04	1.60	MEAN	2.35	S.D.	1.0
PEFF	3.44	3.02	3.85	3.56	4.28	3.94	4.29	4.04	MEAN	3.80	S.D.	1.2
DAF	1.11	1.83	1.25	2.18	1.40	2.43	1.41	2.53	MEAN	1.77	S.D.	0.5

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
12	PLATE	A	2.00	49,599	FAR

PMAX	3.10	1.76	3.08	1.71	3.06	1.70	3.05	1.68	MEAN	2.39	S.D.	1.0
PEFF	4.44	4.17	4.98	4.56	5.09	4.56	4.64	4.14	MEAN	4.57	S.D.	1.4
DAF	1.43	2.37	1.62	2.66	1.65	2.68	1.52	2.47	MEAN	2.05	S.D.	0.5

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
12	PLATE	A	2.70	65,000	NEAR

PMAX	2.33	1.53	2.32	1.42	2.31	1.31	2.29	1.29	MEAN	1.85	S.D.	0.7
PEFF	2.87	2.74	3.38	3.20	3.64	3.43	3.56	3.3	MEAN	3.27	S.D.	1.0
DAF	1.23	1.79	1.46	2.26	1.58	2.62	1.55	2.58	MEAN	1.89	S.D.	0.5

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
12	PLATE	A	2.70	65,000	FAR

PMAX	2.29	1.53	2.27	1.52	2.26	1.42	2.25	1.33	MEAN	1.87	S.D.	0.7
PEFF	3.73	3.52	3.91	3.54	3.51	3.20	2.82	2.58	MEAN	3.34	S.D.	1.1
DAF	1.63	2.16	1.67	2.33	1.55	2.26	1.[illegible]	1.94	MEAN	1.85	S.D.	0.3

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ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD							
12	PLATE	B	1.3	38,000	NEAR							
PMAX	2.43	1.61	2.42	1.52	2.42	1.46	2.42	1.44	MEAN	1.97	S.D.	0.7
PEFF	2.45	2.03	2.52	2.47	3.22	3.02	3.62	3.32	MEAN	2.83	S.D.	1.0
DAF	1.01	1.26	1.04	1.63	1.33	2.06	1.50	2.30	MEAN	1.52	S.D.	0.4

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD							
12	PLATE	B	1.3	38,000	FAR							
PMAX	3.76	1.96	3.76	1.93	3.75	1.91	3.75	1.89	MEAN	2.84	S.D.	1.3
PEFF	4.19	3.59	4.02	3.37	4.42	4.20	5.16	4.77	MEAN	4.22	S.D.	1.4
DAF	1.11	1.83	1.07	1.75	1.18	2.20	1.38	2.53	MEAN	1.63	S.D.	0.5

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD							
12	PLATE	B	1.5	40,500	NEAR							
PMAX	2.18	1.62	2.17	1.52	2.15	1.46	2.14	1.43	MEAN	1.83	S.D.	0.6
PEFF	3.07	2.73	2.82	2.46	2.68	2.58	3.34	3.12	MEAN	2.85	S.D.	0.9
DAF	1.41	1.68	1.30	1.61	1.25	1.77	1.56	2.19	MEAN	1.60	S.D.	0.3

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD							
12	PLATE	B	1.5	40,500	FAR							
PMAX	3.45	1.83	3.43	1.78	3.41	1.75	3.39	1.73	MEAN	2.60	S.D.	1.1
PEFF	4.18	3.60	3.98	3.37	3.80	3.36	4.35	4.09	MEAN	3.84	S.D.	1.2
DAF	1.21	1.97	1.16	1.89	1.11	1.91	1.28	2.36	MEAN	1.61	S.D.	0.4

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD							
12	PLATE	B	2.2	45,000	NEAR							
PMAX	2.91	1.70	2.90	1.68	2.88	1.66	2.86	1.64	MEAN	2.28	S.D.	0.9
PEFF	3.67	3.21	3.48	2.99	3.31	2.79	3.10	2.69	MEAN	3.15	S.D.	1.0
DAF	1.26	1.88	1.20	1.78	1.15	1.68	1.09	1.64	MEAN	1.46	S.D.	0.3

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD							
12	PLATE	B	2.2	45,000	FAR							
PMAX	3.13	1.77	3.11	1.65	3.09	1.57	3.07	1.52	MEAN	2.36	S.D.	1.0
PEFF	3.89	3.36	3.71	3.13	3.54	2.93	3.41	3.28	MEAN	3.40	S.D.	1.1
DAF	1.24	1.93	1.19	1.90	1.15	1.87	1.11	2.15	MEAN	1.57	S.D.	0.4

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD							
12	PLATE	B	2.7	59,000	NEAR							
PMAX	2.35	1.80	2.34	1.74	2.32	1.67	2.31	1.26	MEAN	1.80	S.D.	0.7
PEFF	2.73	2.24	3.14	2.86	3.32	2.95	3.15	2.88	MEAN	2.78	S.D.	0.3
DAF	1.16	1.24	1.34	2.23	1.43	2.32	1.37	2.29	MEAN	1.76	S.D.	0.4

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD							
12	PLATE	B	2.7	59,000	FAR							
PMAX	3.27	1.91	3.26	1.83	3.25	1.82	3.23	1.21	MEAN	1.75	S.D.	0.7
PEFF	3.77	3.41	3.73	3.43	3.47	3.02	2.87	3.32	MEAN	3.24	S.D.	1.1
DAF	1.69	1.97	1.64	2.74	1.52	2.47	1.19	1.92	MEAN	1.99	S.D.	0.5

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ELEMENT TYPE CONTRACTOR MACH ALTITUDE FIELD
13 PLATE A 1.25 40,999 NEAR

PMAX	2.35	1.28	2.32	1.55	2.29	1.46	2.25	1.42	MEAN	1.92	S.D.	0.73
PEFF	5.41	5.14	5.05	4.63	4.56	4.12	3.98	3.53	MEAN	4.54	S.D.	1.56
DAF	2.31	3.70	2.18	3.39	2.00	3.32	1.77	2.49	MEAN	2.44	S.D.	0.46

ELEMENT TYPE CONTRACTOR MACH ALTITUDE FIELD
13 PLATE A 1.25 40,899 FAR

PMAX	3.51	2.07	3.50	2.39	3.50	2.03	3.47	2.01	MEAN	2.77	S.D.	1.16
PEFF	6.47	6.03	5.88	5.47	5.35	4.76	4.59	3.95	MEAN	5.32	S.D.	1.87
DAF	1.84	2.92	1.71	2.67	1.53	2.34	1.31	1.96	MEAN	2.04	S.D.	0.56

ELEMENT TYPE CONTRACTOR MACH ALTITUDE FIELD
13 PLATE A 1.50 44,599 NEAR

PMAX	2.25	1.34	2.22	1.42	2.19	1.35	2.16	1.33	MEAN	1.81	S.D.	0.71
PEFF	5.62	5.21	5.27	4.75	4.89	4.22	4.79	4.16	MEAN	4.87	S.D.	1.61
DAF	2.50	3.89	2.37	3.35	2.24	3.12	2.22	3.14	MEAN	2.79	S.D.	0.51

ELEMENT TYPE CONTRACTOR MACH ALTITUDE FIELD
13 PLATE A 1.50 44,599 FAR

PMAX	3.25	1.87	3.23	1.84	3.21	1.82	3.19	1.80	MEAN	2.53	S.D.	1.08
PEFF	5.68	6.23	6.23	5.73	5.64	5.32	4.92	4.24	MEAN	5.58	S.D.	1.93
DAF	2.06	3.34	1.93	3.09	1.75	2.76	1.54	2.36	MEAN	2.35	S.D.	0.65

ELEMENT TYPE CONTRACTOR MACH ALTITUDE FIELD
13 PLATE A 2.00 49,599 NEAR

PMAX	2.87	1.59	2.86	1.57	2.84	1.54	2.82	1.52	MEAN	2.20	S.D.	0.91
PEFF	5.63	5.19	5.27	4.73	4.86	4.28	4.73	4.18	MEAN	4.86	S.D.	1.60
DAF	1.95	3.27	1.85	3.06	1.71	2.77	1.68	2.74	MEAN	2.38	S.D.	0.65

ELEMENT TYPE CONTRACTOR MACH ALTITUDE FIELD
13 PLATE A 2.00 49,599 FAR

PMAX	2.84	1.67	2.86	1.65	2.85	1.62	2.83	1.60	MEAN	2.25	S.D.	0.96
PEFF	6.04	5.68	5.60	5.17	5.17	4.69	4.72	4.14	MEAN	5.14	S.D.	1.73
DAF	2.12	3.37	1.98	3.14	1.82	2.83	1.68	2.58	MEAN	2.44	S.D.	0.64

ELEMENT TYPE CONTRACTOR MACH ALTITUDE FIELD
13 PLATE A 2.50 65,000 NEAR

PMAX	2.00	1.51	1.98	1.38	2.15	1.29	2.14	1.25	MEAN	1.71	S.D.	0.66
PEFF	4.35	4.17	4.21	3.99	4.06	3.90	3.76	3.48	MEAN	3.98	S.D.	1.28
DAF	2.14	2.76	2.13	2.89	1.89	2.94	1.76	2.78	MEAN	2.42	S.D.	0.48

ELEMENT TYPE CONTRACTOR MACH ALTITUDE FIELD
13 PLATE A 2.70 65,000 FAR

PMAX	1.94	1.59	1.92	1.48	2.11	1.36	2.10	1.26	MEAN	1.72	S.D.	0.64
PEFF	4.24	4.02	3.97	3.71	3.67	3.38	3.22	2.90	MEAN	3.64	S.D.	1.23
DAF	2.18	2.63	2.07	2.94	1.74	2.97	1.54	2.30	MEAN	2.17	S.D.	0.37

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ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
13	PLATE	B	1.3	38,000	NEAR

PMAX	2.02	1.47	2.00	1.37	2.24	1.33	2.23	1.31	MEAN	1.75	S.D.	0.68
PEFF	4.66	4.26	4.35	3.88	4.45	3.68	4.22	3.53	MEAN	4.13	S.D.	1.36
DAF	2.31	2.89	2.18	2.83	1.99	2.76	1.89	2.69	MEAN	2.44	S.D.	0.40

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
13	PLATE	B	1.3	38,000	FAR

PMAX	3.18	1.80	3.16	1.73	3.48	1.83	3.47	1.81	MEAN	2.56	S.D.	1.15
PEFF	6.17	5.69	5.83	5.23	6.24	5.49	5.73	4.85	MEAN	5.65	S.D.	1.84
DAF	1.94	3.16	1.84	3.03	1.79	3.00	1.65	2.68	MEAN	2.39	S.D.	0.64

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
13	PLATE	B	1.5	40,500	NEAR

PMAX	2.02	1.53	2.00	1.41	1.98	1.33	1.97	1.29	MEAN	1.69	S.D.	0.62
PEFF	4.85	4.50	4.55	4.12	4.76	4.21	4.32	3.74	MEAN	4.38	S.D.	1.43
DAF	2.41	2.94	2.68	2.92	2.40	3.17	2.19	2.89	MEAN	2.65	S.D.	0.37

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
13	PLATE	B	1.5	40,500	FAR

PMAX	3.20	1.72	3.18	1.69	3.16	1.66	3.14	1.63	MEAN	2.42	S.D.	1.10
PEFF	5.81	5.34	5.79	5.11	5.76	5.06	5.26	4.44	MEAN	5.32	S.D.	1.74
DAF	1.81	3.11	1.82	3.02	1.82	3.05	1.68	2.72	MEAN	2.33	S.D.	0.65

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
13	PLATE	B	2.2	45,000	NEAR

PMAX	2.70	1.63	2.68	1.60	2.66	1.58	2.64	1.55	MEAN	2.13	S.D.	0.88
PEFF	4.44	4.11	4.65	4.18	4.37	3.84	3.97	3.34	MEAN	4.11	S.D.	1.36
DAF	1.65	2.53	1.73	2.61	1.64	2.43	1.53	2.15	MEAN	2.03	S.D.	0.45

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
13	PLATE	B	2.2	45,000	FAR

PMAX	2.92	1.67	2.88	1.53	2.86	1.44	2.84	1.42	MEAN	2.19	S.D.	0.99
PEFF	5.37	4.99	5.52	4.97	5.39	4.61	4.93	4.28	MEAN	5.04	S.D.	1.64
DAF	1.96	2.99	1.92	3.24	1.89	3.33	1.75	3.02	MEAN	2.50	S.D.	0.70

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
13	PLATE	B	2.7	59,300	NEAR

PMAX	1.98	1.18	1.96	1.16	2.16	1.22	2.14	1.20	MEAN	1.63	S.D.	0.59
PEFF	4.05	3.75	3.77	3.42	3.54	3.12	3.35	2.97	MEAN	3.50	S.D.	1.16
DAF	2.04	3.18	1.92	3.24	1.64	2.67	1.56	2.47	MEAN	2.29	S.D.	0.59

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
13	PLATE	B	2.7	59,000	FAR

PMAX	1.92	1.21	1.96	1.12	2.09	1.17	2.08	1.16	MEAN	1.58	S.D.	0.67
PEFF	4.12	3.86	3.81	3.53	3.47	3.13	3.01	2.62	MEAN	3.44	S.D.	1.19
DAF	2.15	3.18	2.01	3.13	1.67	2.67	1.45	2.26	MEAN	2.31	S.D.	0.63

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	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD						
	14	PLATE	A	1.25	40,899	NEAR						
PMAX	2.65	1.41	2.61	1.35	2.84	1.45	2.85	1.83	MEAN	2.30	S.D.	0.87
PEFF	2.43	1.27	2.96	1.86	5.25	2.[illegible]	5.31	1.73	MEAN	2.95	S.D.	1.74
DAF	0.92	1.[illegible]	1.13	1.01	1.93	1.11	1.86	0.94	MEAN	1.23	S.D.	0.39

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD						
	14	PLATE	A	1.25	40,899	FAR						
PMAX	3.67	2.16	3.63	2.03	3.77	2.12	3.90	2.11	MEAN	2.95	S.D.	1.28
PEFF	4.79	2.78	4.48	2.57	6.17	2.86	6.25	2.12	MEAN	4.00	S.D.	2.06
DAF	1.31	1.29	1.23	1.23	1.57	1.35	1.60	1.00	MEAN	1.32	S.D.	0.19

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD						
	14	PLATE	A	1.50	44,599	NEAR						
PMAX	2.32	1.41	2.30	1.75	2.28	1.72	2.27	1.71	MEAN	2.02	S.D.	0.70
PEFF	2.76	1.77	3.06	1.69	3.31	1.64	3.41	1.52	MEAN	2.40	S.D.	1.10
DAF	1.19	0.98	1.33	0.97	1.45	0.96	1.50	0.89	MEAN	1.16	S.D.	0.24

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD						
	14	PLATE	A	1.50	44,599	FAR						
PMAX	3.14	2.13	3.14	2.07	3.18	2.33	3.12	2.21	MEAN	2.59	S.D.	0.99
PEFF	3.74	2.40	3.78	2.22	3.75	2.03	3.67	1.88	MEAN	2.93	S.D.	1.26
DAF	1.19	1.13	1.20	1.07	1.23	1.00	1.18	0.93	MEAN	1.11	S.D.	0.10

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD						
	14	PLATE	A	2.00	49,899	NEAR						
PMAX	2.73	1.62	2.72	1.61	2.71	1.59	2.75	1.64	MEAN	2.17	S.D.	0.90
PEFF	4.37	1.98	4.66	1.97	4.67	1.89	3.26	1.51	MEAN	3.04	S.D.	1.65
DAF	1.60	1.22	1.71	1.23	1.73	1.19	1.19	0.92	MEAN	1.35	S.D.	0.[illegible]

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD						
	14	PLATE	A	2.00	49,899	FAR						
PMAX	2.74	1.48	2.73	1.44	2.72	1.79	2.79	1.81	MEAN	2.29	S.D.	0.87
PEFF	4.35	2.02	4.69	2.02	4.76	1.36	3.26	1.64	MEAN	3.08	S.D.	1.64
DAF	1.59	1.[illegible]	1.70	1.13	1.75	1.09	1.17	1.[illegible]	MEAN	1.30	S.D.	0.33

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD						
	14	PLATE	A	2.40	65,000	NEAR						
PMAX	2.02	1.39	2.03	1.36	2.02	1.30	2.01	1.26	MEAN	1.67	S.D.	0.64
PEFF	3.97	1.85	3.44	1.58	3.37	1.53	4.17	1.44	MEAN	2.67	S.D.	1.44
DAF	1.98	1.33	1.71	1.16	1.68	1.18	2.07	1.14	MEAN	1.53	S.D.	0.38

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD						
	14	PLATE	A	2.40	65,000	FAR						
PMAX	1.99	1.54	2.35	1.50	2.34	1.44	2.03	1.39	MEAN	1.75	S.D.	0.63
PEFF	3.89	1.72	3.43	1.54	3.47	1.44	4.29	1.42	MEAN	2.65	S.D.	1.46
DAF	1.93	1.12	1.68	1.02	1.70	1.03	2.11	1.02	MEAN	1.45	S.D.	0.45

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ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
14	PLATE	B	1.3	38,000	NEAR

PMAX	2.25	1.73	2.22	1.68	2.20	1.60	1.97	1.63	MEAN	1.92	S.D.	0.66
PEFF	2.94	1.79	2.73	1.64	2.47	1.58	2.30	1.62	MEAN	2.13	S.D.	0.86
DAF	1.31	1.03	1.23	0.98	1.13	0.96	1.15	0.99	MEAN	1.10	S.D.	0.13

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
14	PLATE	B	1.3	38,000	FAR

PMAX	3.56	2.13	3.52	2.07	3.48	2.03	3.14	2.01	MEAN	2.74	S.D.	1.13
PEFF	4.66	2.62	4.34	2.47	3.94	2.43	3.61	2.63	MEAN	3.34	S.D.	1.38
DAF	1.31	1.23	1.23	1.20	1.13	1.20	1.15	1.31	MEAN	1.22	S.D.	0.06

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
14	PLATE	B	1.5	40,500	NEAR

PMAX	2.17	1.73	2.14	1.69	2.11	1.64	1.91	1.62	MEAN	1.87	S.D.	0.63
PEFF	2.51	1.71	2.66	1.65	2.74	1.58	3.05	1.55	MEAN	2.18	S.D.	0.92
DAF	1.15	0.99	1.24	0.98	1.30	0.97	1.59	0.95	MEAN	1.15	S.D.	0.23

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
14	PLATE	B	1.5	40,500	FAR

PMAX	3.05	2.00	3.04	1.93	3.02	1.89	3.01	1.87	MEAN	2.48	S.D.	0.98
PEFF	3.71	2.35	3.74	2.18	3.72	2.00	3.63	1.85	MEAN	2.90	S.D.	1.25
DAF	1.22	1.18	1.23	1.13	1.23	1.06	1.20	0.99	MEAN	1.15	S.D.	0.09

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
14	PLATE	B	2.2	45,000	NEAR

PMAX	2.62	1.61	2.60	1.62	2.59	1.58	2.58	1.57	MEAN	2.09	S.D.	0.85
PEFF	4.07	1.86	4.35	1.98	4.31	1.90	5.28	1.84	MEAN	3.21	S.D.	1.73
DAF	1.56	1.22	1.67	1.24	1.66	1.20	2.05	1.18	MEAN	1.47	S.D.	0.31

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
14	PLATE	B	2.2	45,000	FAR

PMAX	2.61	1.64	2.61	1.77	2.61	1.73	2.59	1.70	MEAN	2.18	S.D.	0.82
PEFF	4.22	2.15	5.06	1.85	4.49	1.88	6.[illegible]	1.59	MEAN	3.97	S.D.	2.13
DAF	1.61	1.17	1.93	1.04	1.72	1.09	2.48	1.03	MEAN	1.50	S.D.	0.55

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
14	PLATE	B	2.7	53,000	NEAR

PMAX	2.07	1.21	2.06	1.26	2.06	1.18	2.04	1.22	MEAN	1.64	S.D.	0.67
PEFF	3.93	1.79	3.91	1.63	3.42	1.44	4.28	1.41	MEAN	2.68	S.D.	1.49
DAF	1.90	1.48	1.90	1.29	1.79	1.21	2.10	1.15	MEAN	1.56	S.D.	0.36

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
14	PLATE	B	2.7	53,000	FAR

PMAX	1.97	1.31	2.03	1.33	2.02	1.31	2.01	1.33	MEAN	1.66	S.D.	0.64
PEFF	3.43	1.66	3.41	1.47	3.46	1.43	4.30	1.33	MEAN	2.61	S.D.	1.48
DAF	1.74	1.27	1.68	1.13	1.71	1.17	2.14	1.17	MEAN	1.44	S.D.	0.43

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
15	PLATE	A	1.25	40,899	NEAR

PMAX	2.19	1.71	2.14	1.61	2.35	1.57	2.32	1.54	MEAN	1.93	S.D.	0.70
PEFF	3.92	3.63	4.09	3.78	3.99	3.67	3.90	3.24	MEAN	3.71	S.D.	1.20
DAF	1.79	2.12	1.91	2.35	1.70	2.34	1.47	2.11	MEAN	1.97	S.D.	0.31

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
15	PLATE	A	1.25	40,899	FAR

PMAX	3.23	1.92	3.19	1.89	3.44	1.96	3.42	1.36	MEAN	2.63	S.D.	1.11
PEFF	5.77	5.33	5.75	5.21	5.24	4.66	4.84	3.57	MEAN	4.95	S.D.	1.74
DAF	1.79	2.77	1.80	2.76	1.52	2.36	1.18	1.82	MEAN	2.00	S.D.	0.58

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
15	PLATE	A	1.50	44,599	NEAR

PMAX	2.00	1.59	1.98	1.50	1.95	1.44	1.93	1.43	MEAN	1.73	S.D.	0.60
PEFF	3.14	2.83	3.33	3.24	4.02	3.83	4.33	4.06	MEAN	3.60	S.D.	1.25
DAF	1.59	1.78	1.68	2.16	2.06	2.65	2.25	2.85	MEAN	2.13	S.D.	0.45

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
15	PLATE	A	1.50	44,599	FAR

PMAX	2.73	1.93	2.78	1.73	2.75	1.72	2.75	1.70	MEAN	2.27	S.D.	0.89
PEFF	5.19	4.79	5.52	5.00	5.35	4.74	4.97	4.02	MEAN	4.90	S.D.	1.61
DAF	1.86	2.51	1.99	2.90	1.94	2.75	1.67	2.36	MEAN	2.24	S.D.	0.43

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
15	PLATE	A	2.00	49,599	NEAR

PMAX	2.38	1.43	2.36	1.41	2.35	1.38	2.41	1.44	MEAN	1.90	S.D.	0.78
PEFF	3.10	2.69	3.50	3.24	3.86	3.62	4.09	3.83	MEAN	3.49	S.D.	1.19
DAF	1.30	1.88	1.48	2.30	1.65	2.62	1.69	2.65	MEAN	1.95	S.D.	0.52

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
15	PLATE	A	2.00	49,599	FAR

PMAX	2.40	1.68	2.39	1.68	2.37	1.62	2.45	1.53	MEAN	1.99	S.D.	0.76
PEFF	4.13	3.81	4.59	4.13	4.63	4.10	4.36	3.97	MEAN	4.22	S.D.	1.36
DAF	1.72	2.27	1.92	2.61	1.96	2.69	1.78	2.60	MEAN	2.19	S.D.	0.40

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
15	PLATE	A	2.70	65,000	NEAR

PMAX	1.75	1.41	1.79	1.34	1.78	1.24	1.77	1.15	MEAN	1.53	S.D.	0.55
PEFF	3.61	2.97	3.15	2.99	3.37	3.15	3.26	3.09	MEAN	3.01	S.D.	1.00
DAF	1.49	1.75	1.76	2.21	1.89	2.54	1.84	2.68	MEAN	2.02	S.D.	0.47

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
15	PLATE	A	2.70	65,000	FAR

PMAX	1.75	1.52	1.91	1.44	1.80	1.34	1.79	1.26	MEAN	1.59	S.D.	0.55
PEFF	3.41	3.19	3.57	3.33	3.26	2.98	2.63	2.42	MEAN	3.09	S.D.	1.05
DAF	1.94	2.10	1.89	2.29	1.81	2.32	1.48	1.92	MEAN	1.97	S.D.	0.26

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
15	PLATE	B	1.3	38,000	NEAR					
PMAX 1.95	1.54	1.92	1.45	1.90	1.40	1.73	1.38	MEAN 1.66	S.D.	0.58
PEFF 2.27	1.95	2.46	2.42	3.12	2.95	3.49	3.25	MEAN 2.74	S.D.	1.01
DAF 1.16	1.27	1.28	1.66	1.65	2.10	2.01	2.35	MEAN 1.69	S.D.	0.44

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
15	PLATE	B	1.3	38,000	FAR					
PMAX 3.11	1.90	3.07	1.79	3.04	1.72	2.78	1.70	MEAN 2.39	S.D.	1.00
PEFF 3.96	3.43	3.77	3.23	4.30	4.10	4.98	4.66	MEAN 4.05	S.D.	1.40
DAF 1.27	1.81	1.23	1.80	1.42	2.38	1.79	2.74	MEAN 1.80	S.D.	0.53

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
15	PLATE	B	1.5	40,500	NEAR					
PMAX 1.87	1.55	1.83	1.46	1.80	1.40	1.65	1.37	MEAN 1.62	S.D.	0.55
PEFF 2.87	2.59	2.60	2.30	2.55	2.46	3.15	2.99	MEAN 2.69	S.D.	0.89
DAF 1.54	1.66	1.42	1.98	1.42	1.76	1.91	2.18	MEAN 1.68	S.D.	0.26

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
15	PLATE	B	1.5	40,500	FAR					
PMAX 2.68	1.77	2.66	1.67	2.64	1.60	2.62	1.57	MEAN 2.15	S.D.	0.86
PEFF 3.89	3.38	3.68	3.13	3.47	3.17	4.10	3.82	MEAN 3.58	S.D.	1.18
DAF 1.45	1.90	1.38	1.87	1.32	1.98	1.56	2.43	MEAN 1.74	S.D.	0.36

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
15	PLATE	B	2.2	45,000	NEAR					
PMAX 2.26	1.41	2.24	1.36	2.22	1.34	2.20	1.31	MEAN 1.79	S.D.	0.73
PEFF 3.31	2.84	3.09	2.60	2.88	2.36	2.64	2.41	MEAN 2.77	S.D.	0.93
DAF 1.46	2.02	1.38	1.91	1.30	1.77	1.20	1.84	MEAN 1.61	S.D.	0.31

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
15	PLATE	B	2.2	45,000	FAR					
PMAX 2.27	1.67	2.25	1.56	2.24	1.48	2.22	1.44	MEAN 1.89	S.D.	0.71
PEFF 3.47	2.98	3.2	2.74	3.07	2.51	3.09	2.91	MEAN 3.01	S.D.	0.99
DAF 1.53	1.79	1.45	1.75	1.37	1.69	1.40	2.02	MEAN 1.62	S.D.	0.23

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
15	PLATE	B	2.7	59,000	NEAR					
PMAX 1.75	1.05	1.80	1.10	1.78	1.08	1.77	1.06	MEAN 1.42	S.D.	0.58
PEFF 2.41	2.20	2.85	2.58	2.99	2.71	2.85	2.65	MEAN 2.66	S.D.	0.87
DAF 1.38	2.09	1.59	2.35	1.68	2.52	1.61	2.50	MEAN 1.96	S.D.	0.46

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD					
15	PLATE	B	2.7	59,000	FAR					
PMAX 1.71	1.22	1.77	1.16	1.76	1.11	1.75	1.09	MEAN 1.45	S.D.	0.56
PEFF 3.39	3.11	3.50	3.14	3.12	2.76	2.39	2.12	MEAN 2.94	S.D.	1.04
DAF 1.98	2.55	1.97	2.69	1.77	2.48	1.37	1.95	MEAN 2.09	S.D.	0.45

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD							
16	PLATE	A	1.25	40,000	NEAR							
RMAX	1.61	1.71	1.61	1.41	1.86	1.40	1.71	1.36	MEAN	1.60	S.D.	0.17
DEFF	5.29	4.51	4.46	4.50	4.38	3.59	3.80	3.44	MEAN	4.39	S.D.	1.51
EAF	2.63	2.64	2.55	3.02	2.35	2.45	2.22	2.52	MEAN	2.05	S.D.	0.30

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD							
16	PLATE	A	1.25	40,000	FAR							
RMAX	2.01	1.93	2.97	1.80	2.54	1.78	2.74	1.75	MEAN	2.35	S.D.	0.95
DEFF	6.28	5.24	5.76	5.25	5.13	4.58	4.36	3.75	MEAN	5.13	S.D.	1.82
EAF	2.05	3.21	1.94	2.53	1.75	2.56	1.55	2.16	MEAN	2.28	S.D.	0.57

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD							
16	PLATE	A	1.50	44,599	NEAR							
RMAX	1.57	1.44	1.59	1.35	1.93	1.29	1.75	1.29	MEAN	1.52	S.D.	0.60
DEFF	4.15	4.64	4.77	4.21	4.30	3.65	4.46	3.84	MEAN	4.38	S.D.	1.46
EAF	2.61	3.71	2.49	3.12	2.23	2.54	2.54	2.99	MEAN	2.75	S.D.	0.35

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD							
16	PLATE	A	1.50	44,599	FAR							
RMAX	2.46	1.74	2.44	1.62	2.42	1.54	2.56	1.56	MEAN	2.05	S.D.	0.79
DEFF	6.28	5.11	5.60	5.26	5.19	4.57	4.62	3.43	MEAN	5.18	S.D.	1.80
EAF	2.51	3.34	2.38	3.25	2.15	2.56	1.80	2.48	MEAN	2.61	S.D.	0.53

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD							
16	PLATE	A	2.00	44,599	NEAR							
RMAX	2.14	1.65	2.12	1.21	2.10	1.18	2.15	1.25	MEAN	1.68	S.D.	0.71
DEFF	5.05	4.60	4.88	4.16	4.23	3.62	4.29	3.69	MEAN	4.29	S.D.	1.43
EAF	2.55	3.58	2.21	3.42	2.02	3.06	1.99	2.95	MEAN	2.70	S.D.	0.63

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD							
16	PLATE	A	2.00	44,599	FAR							
RMAX	2.19	1.55	2.13	1.44	2.10	1.38	2.17	1.37	MEAN	1.78	S.D.	0.68
DEFF	5.51	4.69	5.11	4.59	4.58	3.99	4.33	3.59	MEAN	4.60	S.D.	1.58
EAF	2.57	3.28	2.40	3.20	2.18	2.93	1.99	2.73	MEAN	2.65	S.D.	0.46

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD							
16	PLATE	A	2.70	65,000	NEAR							
RMAX	1.58	1.49	1.56	1.27	1.60	1.18	1.55	1.07	MEAN	1.41	S.D.	0.49
DEFF	4.04	3.94	3.88	3.64	3.74	3.46	3.42	3.17	MEAN	3.65	S.D.	1.18
EAF	2.57	2.16	2.49	2.96	2.33	2.94	2.15	2.95	MEAN	2.63	S.D.	0.30

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD							
16	PLATE	A	2.70	65,000	AR							
RMAX	1.56	1.48	1.55	1.36	1.60	1.27	1.59	1.17	MEAN	1.45	S.D.	0.48
DEFF	3.96	3.72	3.67	3.41	3.38	3.09	2.93	2.62	MEAN	3.35	S.D.	1.14
EAF	2.53	2.52	2.37	2.91	2.11	2.43	1.85	2.24	MEAN	2.32	S.D.	0.24

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD						
16	PLATE	B	1.3	38,000	NEAR						
PMAX	1.54	1.42	1.52	1.22	1.75	1.34	1.61	1.26	MEAN	1.46	S.D. 0.49
PEFF	4.39	3.99	4.06	3.59	4.03	3.32	3.89	3.34	MEAN	3.82	S.D. 1.26
DAF	2.85	2.81	2.67	2.72	2.30	2.60	2.41	2.66	MEAN	2.63	S.D. 0.19

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD						
16	PLATE	B	1.3	38,000	FAR						
PMAX	2.52	1.74	2.50	1.62	2.81	1.57	2.61	1.55	MEAN	2.11	S.D. 0.85
PEFF	5.81	5.33	5.44	4.85	5.34	5.14	5.30	4.54	MEAN	5.28	S.D. 1.72
DAF	2.31	3.06	2.18	2.99	2.07	3.27	2.03	2.94	MEAN	2.61	S.D. 0.51

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD						
16	PLATE	B	1.5	40,500	NEAR						
PMAX	1.60	1.43	1.37	1.32	1.74	1.25	1.63	1.24	MEAN	1.51	S.D. 0.63
PEFF	4.35	4.00	4.04	3.60	4.14	3.53	3.94	3.36	MEAN	3.87	S.D. 1.26
DAF	2.42	2.79	2.25	2.72	2.38	2.83	2.60	2.71	MEAN	2.59	S.D. 0.21

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD						
16	PLATE	B	1.5	40,500	FAR						
PMAX	2.35	1.63	2.26	1.51	2.34	1.42	2.43	1.42	MEAN	1.94	S.D. 0.77
PEFF	5.20	4.71	4.94	4.23	5.04	4.31	4.74	3.89	MEAN	4.63	S.D. 1.52
DAF	2.18	2.89	2.09	2.81	2.16	3.02	1.95	2.73	MEAN	2.48	S.D. 0.42

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD						
16	PLATE	B	2.2	45,000	NEAR						
PMAX	1.58	1.29	1.56	1.17	1.93	1.11	1.90	1.08	MEAN	1.55	S.D. 0.64
PEFF	3.83	3.47	3.90	3.39	3.82	3.05	3.16	2.49	MEAN	3.37	S.D. 1.15
DAF	1.93	2.70	1.99	2.90	1.88	2.74	1.66	2.30	MEAN	2.26	S.D. 0.47

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD						
16	PLATE	B	2.2	45,000	FAR						
PMAX	2.01	1.56	1.58	1.44	1.95	1.35	1.93	1.30	MEAN	1.69	S.D. 0.61
PEFF	4.60	4.21	4.48	3.88	4.49	3.88	4.04	3.31	MEAN	4.11	S.D. 1.36
DAF	2.29	2.69	2.26	2.69	2.30	2.87	2.09	2.55	MEAN	2.47	S.D. 0.27

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD						
16	PLATE	B	2.7	59,000	NEAR						
PMAX	1.54	0.93	1.52	0.89	1.58	0.93	1.56	0.91	MEAN	1.23	S.D. 0.51
PEFF	3.64	3.32	3.33	2.97	3.39	2.66	2.94	2.48	MEAN	3.05	S.D. 1.03
DAF	2.36	3.03	2.19	3.33	1.96	2.86	1.88	2.73	MEAN	2.62	S.D. 0.63

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD						
16	PLATE	B	2.7	59,000	FAR						
PMAX	1.52	1.13	1.50	1.04	1.55	1.00	1.54	0.98	MEAN	1.28	S.D. 0.48
PEFF	3.80	3.52	3.48	3.16	3.16	2.80	2.68	2.30	MEAN	3.11	S.D. 1.10
DAF	2.51	3.12	2.32	3.03	2.03	2.79	1.74	2.35	MEAN	2.49	S.D. 0.48

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
17	PLATE	A	1.25	40,899	NEAR

PMAX	1.89	1.56	1.88	1.54	1.87	1.51	1.92	1.51	MEAN 1.71	S.D.	0.57
PEFF	2.92	1.50	2.88	1.37	3.07	1.38	3.69	1.37	MEAN 2.27	S.D.	1.19
DAF	1.55	0.97	1.54	0.89	1.64	0.91	1.92	0.91	MEAN 1.29	S.D.	0.41

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
17	PLATE	A	1.25	40,899	FAR

PMAX	2.46	1.79	2.48	1.78	2.46	1.75	2.49	1.75	MEAN 2.12	S.D.	0.77
PEFF	3.75	1.79	3.78	1.76	3.76	1.59	3.67	1.52	MEAN 2.70	S.D.	1.39
DAF	1.52	1.00	1.52	0.99	1.53	0.91	1.47	0.87	MEAN 1.23	S.D.	0.31

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
17	PLATE	A	1.50	44,599	NEAR

PMAX	1.54	1.14	1.52	1.15	1.54	1.17	1.56	1.19	MEAN 1.35	S.D.	0.47
PEFF	3.56	1.70	5.32	1.47	4.32	1.50	4.72	1.46	MEAN 3.01	S.D.	1.88
DAF	2.31	1.49	3.50	1.28	2.80	1.29	3.03	1.23	MEAN 2.12	S.D.	0.91

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
17	PLATE	A	1.50	44,599	FAR

PMAX	2.21	1.49	2.20	1.50	2.20	1.50	2.20	1.51	MEAN 1.85	S.D.	0.69
PEFF	5.07	2.06	6.36	1.91	4.87	1.82	4.95	1.65	MEAN 3.59	S.D.	2.19
DAF	2.29	1.38	2.89	1.27	2.21	1.21	2.25	1.09	MEAN 1.82	S.D.	0.66

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
17	PLATE	A	2.00	49,599	NEAR

PMAX	2.01	0.94	2.01	0.94	2.00	0.97	2.00	1.01	MEAN 1.48	S.D.	0.72
PEFF	3.57	1.69	3.73	1.42	3.40	1.34	4.29	1.42	MEAN 2.61	S.D.	1.48
DAF	1.78	1.79	1.86	1.51	1.70	1.39	2.15	1.41	MEAN 1.70	S.D.	0.25

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
17	PLATE	A	2.00	49,599	FAR

PMAX	1.99	1.13	1.99	1.14	1.99	1.14	1.98	1.20	MEAN 1.57	S.D.	0.66
PEFF	3.53	1.52	3.75	1.49	3.71	1.62	4.79	1.44	MEAN 2.74	S.D.	1.60
DAF	1.77	1.35	1.89	1.31	1.90	1.42	2.41	1.20	MEAN 1.66	S.D.	0.41

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
17	PLATE	A	2.70	65,000	NEAR

PMAX	1.47	0.75	1.47	0.75	1.47	0.74	1.47	0.74	MEAN 1.11	S.D.	0.52
PEFF	2.72	1.20	3.46	1.25	3.40	1.16	3.09	0.90	MEAN 2.15	S.D.	1.29
DAF	1.85	1.60	2.35	1.67	2.31	1.56	2.10	1.22	MEAN 1.83	S.D.	0.40

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
17	PLATE	A	2.70	65,000	FAR

PMAX	1.47	0.93	1.47	0.93	1.47	0.92	1.47	0.94	MEAN 1.20	S.D.	0.47
PEFF	2.76	1	3.43	1.25	3.50	1.08	3.57	0.96	MEAN 2.22	S.D.	1.37
DAF	1.87	1.30	2.33	1.34	2.38	1.17	2.43	1.02	MEAN 1.73	S.D.	0.59

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
17	PLATE	B	1.3	38,000	NEAR

PMAX	1.59	1.21	1.63	1.20	1.67	1.21	1.71	1.24	MEAN 1.43	S.D.	0.51
PEFF	2.93	1.72	3.62	1.49	4.35	1.24	3.87	1.14	MEAN 2.55	S.D.	1.51
DAF	1.84	1.42	2.22	1.24	2.61	1.03	2.27	0.92	MEAN 1.70	S.D.	0.63

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
17	PLATE	B	1.3	38,000	FAR

PMAX	2.20	1.56	2.20	1.55	2.24	1.57	2.27	1.58	MEAN 1.90	S.D.	0.69
PEFF	6.13	2.27	5.98	2.01	6.01	1.97	7.42	1.49	MEAN 4.16	S.D.	2.73
DAF	2.79	1.46	2.71	1.29	2.68	1.26	3.27	0.94	MEAN 2.05	S.D.	0.99

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
17	PLATE	B	1.5	40,500	NEAR

PMAX	1.44	0.97	1.49	1.00	1.54	1.00	1.57	1.03	MEAN 1.25	S.D.	0.48
PEFF	4.52	1.99	5.06	1.81	4.58	1.74	4.45	1.24	MEAN 3.17	S.D.	1.97
DAF	3.13	2.05	3.78	1.81	2.98	1.74	2.84	1.21	MEAN 2.39	S.D.	0.79

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
17	PLATE	B	1.5	40,500	FAR

PMAX	2.21	1.21	2.20	1.22	2.20	1.23	2.20	1.25	MEAN 1.72	S.D.	0.75
PEFF	4.19	1.75	5.36	1.94	5.59	1.76	4.83	1.54	MEAN 3.37	S.D.	2.06
DAF	1.90	1.45	2.43	1.59	2.54	1.43	2.20	1.23	MEAN 1.84	S.D.	0.50

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
17	PLATE	B	2.2	45,000	NEAR

PMAX	1.90	0.99	1.90	1.01	1.90	1.05	1.89	1.10	MEAN 1.47	S.D.	0.65
PEFF	3.21	1.56	3.24	1.52	3.22	1.46	3.15	1.39	MEAN 2.34	S.D.	1.17
DAF	1.69	1.57	1.71	1.50	1.70	1.38	1.66	1.26	MEAN 1.56	S.D.	0.17

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
17	PLATE	B	2.2	45,000	FAR

PMAX	2.00	1.04	2.00	1.10	1.99	1.13	1.99	1.18	MEAN 1.55	S.D.	0.68
PEFF	3.41	1.66	3.43	1.57	3.43	1.55	3.36	1.39	MEAN 2.48	S.D.	1.26
DAF	1.71	1.59	1.73	1.44	1.72	1.37	1.69	1.18	MEAN 1.55	S.D.	0.20

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
17	PLATE	B	2.7	59,000	NEAR

PMAX	1.51	0.74	1.50	0.74	1.50	0.74	1.50	0.77	MEAN 1.12	S.D.	0.53
PEFF	2.89	1.15	3.58	1.29	3.54	1.20	3.27	0.93	MEAN 2.23	S.D.	1.36
DAF	1.72	1.55	2.38	1.75	2.36	1.63	2.18	1.22	MEAN 1.87	S.D.	0.41

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
17	PLATE	B	2.7	59,000	FAR

PMAX	1.47	0.82	1.47	0.83	1.47	0.84	1.47	0.87	MEAN 1.15	S.D.	0.49
PEFF	2.77	1.18	3.43	1.20	3.43	1.08	3.41	1.06	MEAN 2.20	S.D.	1.34
DAF	1.88	1.44	2.33	1.45	2.34	1.29	2.33	1.22	MEAN 1.79	S.D.	0.49

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
18	PLATE	A	1.25	40,899	NEAR

PMAX	1.43	1.40	1.42	1.34	1.41	1.29	1.45	1.28	MEAN	1.38	S.D.	0.44
PEFF	1.58	1.41	1.70	1.61	1.51	1.50	1.65	1.83	MEAN	1.61	S.D.	0.52
DAF	1.10	1.01	1.20	1.19	1.07	1.25	1.14	1.43	MEAN	1.17	S.D.	0.13

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
18	PLATE	A	1.25	40,899	FAR

PMAX	1.94	1.60	1.95	1.55	1.93	1.49	1.96	1.48	MEAN	1.74	S.D.	0.59
PEFF	2.44	2.14	2.45	2.16	2.16	2.07	2.05	2.10	MEAN	2.20	S.D.	0.71
DAF	1.26	1.34	1.25	1.40	1.12	1.39	1.05	1.42	MEAN	1.28	S.D.	0.14

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
18	PLATE	A	1.50	44,599	NEAR

PMAX	1.33	1.01	1.30	0.99	1.28	0.98	1.27	1.04	MEAN	1.15	S.D.	0.39
PEFF	1.94	1.94	2.01	1.97	1.98	1.94	1.92	1.87	MEAN	1.95	S.D.	0.61
DAF	1.46	1.92	1.54	1.99	1.54	1.98	1.51	1.79	MEAN	1.72	S.D.	0.23

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
18	PLATE	A	1.50	44,599	FAR

PMAX	1.92	1.33	1.92	1.30	1.92	1.27	1.91	1.28	MEAN	1.61	S.D.	0.60
PEFF	2.53	2.44	2.17	2.12	2.24	2.02	2.03	1.79	MEAN	2.17	S.D.	0.72
DAF	1.32	1.84	1.13	1.63	1.17	1.59	1.06	1.40	MEAN	1.39	S.D.	0.27

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
18	PLATE	A	2.00	49,599	NEAR

PMAX	1.75	0.89	1.75	0.87	1.75	0.95	1.74	1.02	MEAN	1.34	S.D.	0.60
PEFF	2.32	2.17	2.67	2.60	3.29	3.14	3.33	3.18	MEAN	2.84	S.D.	1.00
DAF	1.32	2.45	1.52	2.97	1.88	3.30	1.91	3.13	MEAN	2.31	S.D.	0.76

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
18	PLATE	A	2.00	49,599	FAR

PMAX	1.74	1.00	1.73	0.99	1.73	1.07	1.73	1.14	MEAN	1.39	S.D.	0.57
PEFF	2.98	2.84	3.40	3.21	3.74	3.54	3.42	3.22	MEAN	3.29	S.D.	1.08
DAF	1.71	2.83	1.96	3.25	2.16	3.31	1.98	2.83	MEAN	2.50	S.D.	0.63

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
18	PLATE	A	2.70	65,000	NEAR

PMAX	1.29	0.75	1.29	0.72	1.29	0.71	1.28	0.70	MEAN	1.00	S.D.	0.44
PEFF	2.12	1.95	2.58	2.46	2.84	2.69	2.77	2.65	MEAN	2.51	S.D.	0.85
DAF	1.65	2.61	2.00	3.44	2.20	3.80	2.15	3.80	MEAN	2.71	S.D.	0.95

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
18	PLATE	A	2.70	65,000	FAR

PMAX	1.29	0.92	1.29	0.90	1.29	0.86	1.28	0.85	MEAN	1.09	S.D.	0.40
PEFF	2.94	2.73	3.09	2.82	2.78	2.56	2.18	2.03	MEAN	2.64	S.D.	0.91
DAF	2.28	2.97	2.40	3.15	2.17	2.98	1.70	2.38	MEAN	2.50	S.D.	0.49

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
18	PLATE	B	1.3	38,000	NEAR

PMAX	1.23	1.07	1.24	1.04	1.27	1.03	1.30	1.04	MEAN	1.15	S.D. 0.38
PEFF	1.05	1.25	1.03	1.16	1.03	1.12	1.06	1.09	MEAN	1.10	S.D. 0.35
DAF	0.85	1.16	0.83	1.11	0.81	1.10	0.81	1.04	MEAN	0.97	S.D. 0.15

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
18	PLATE	B	1.3	38,000	FAR

PMAX	1.91	1.39	1.91	1.35	1.90	1.36	1.90	1.34	MEAN	1.63	S.D. 0.59
PEFF	1.37	1.45	1.38	1.43	1.39	1.43	1.38	1.47	MEAN	1.41	S.D. 0.45
DAF	0.72	1.04	0.73	1.06	0.73	1.07	0.73	1.09	MEAN	0.90	S.D. 0.18

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
18	PLATE	B	1.5	40,500	NEAR

PMAX	1.25	0.86	1.25	0.86	1.24	0.91	1.24	1.00	MEAN	1.08	S.D. 0.39
PEFF	1.31	1.29	1.45	1.58	1.68	1.77	1.77	1.83	MEAN	1.59	S.D. 0.54
DAF	1.04	1.50	1.16	1.83	1.35	1.94	1.43	1.83	MEAN	1.51	S.D. 0.33

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
18	PLATE	B	1.5	40,500	FAR

PMAX	1.92	1.08	1.92	1.06	1.91	1.08	1.91	1.18	MEAN	1.51	S.D. 0.64
PEFF	1.48	1.50	1.74	1.88	2.11	2.19	2.29	2.33	MEAN	1.97	S.D. 0.70
DAF	0.77	1.39	0.91	1.77	1.10	2.02	1.20	1.98	MEAN	1.39	S.D. 0.48

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
18	PLATE	B	2.2	45,000	NEAR

PMAX	1.66	0.94	1.65	1.03	1.65	1.09	1.65	1.16	MEAN	1.35	S.D. 0.53
PEFF	1.83	1.51	2.08	1.58	2.19	1.72	2.33	2.12	MEAN	1.92	S.D. 0.67
DAF	1.11	1.62	1.26	1.54	1.33	1.58	1.41	1.82	MEAN	1.46	S.D. 0.23

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
18	PLATE	B	2.2	45,000	FAR

PMAX	1.74	1.00	1.74	1.09	1.74	1.15	1.73	1.23	MEAN	1.43	S.D. 0.56
PEFF	1.86	1.60	1.91	1.53	2.03	1.86	2.58	2.51	MEAN	1.98	S.D. 0.73
DAF	1.07	1.59	1.10	1.40	1.17	1.61	1.49	2.05	MEAN	1.43	S.D. 0.33

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
18	PLATE	B	2.7	59,000	NEAR

PMAX	1.32	0.70	1.31	0.69	1.31	0.74	1.31	0.79	MEAN	1.02	S.D. 0.46
PEFF	2.09	2.00	2.66	2.53	2.96	2.77	2.90	2.73	MEAN	2.58	S.D. 0.89
DAF	1.59	2.85	2.02	3.64	2.26	3.73	2.22	3.44	MEAN	2.72	S.D. 0.93

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
18	PLATE	B	2.7	59,000	FAR

PMAX	1.29	0.74	1.28	0.72	1.28	0.78	1.28	0.83	MEAN	1.02	S.D. 0.42
PEFF	2.96	2.78	3.14	2.88	2.86	2.58	2.23	2.00	MEAN	2.68	S.D. 0.95
DAF	2.31	3.78	2.46	3.97	2.23	3.32	1.74	2.40	MEAN	2.77	S.D. 0.81

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
19	PLATE	A	1.25	40,999	NEAR

PMAX	1.32	1.32	1.25	1.25	1.24	1.19	1.22	1.16	MEAN	1.24	S.D.	0.40
PEFF	3.80	3.51	3.55	3.27	3.22	2.96	2.71	2.50	MEAN	3.19	S.D.	1.09
DAF	2.88	2.66	2.84	2.62	2.60	2.48	2.23	2.15	MEAN	2.56	S.D.	0.29

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
19	PLATE	A	1.25	40,699	FAR

PMAX	1.77	1.50	1.77	1.43	1.76	1.37	1.76	1.34	MEAN	1.59	S.D.	0.54
PEFF	4.50	4.11	4.11	3.67	3.62	3.14	2.87	2.40	MEAN	3.55	S.D.	1.32
DAF	2.53	2.74	2.32	2.57	2.05	2.30	1.63	1.79	MEAN	2.24	S.D.	0.39

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
19	PLATE	A	1.50	44,599	NEAR

PMAX	1.22	0.97	1.19	0.91	1.17	0.91	1.14	0.99	MEAN	1.06	S.D.	0.36
PEFF	1.77	1.45	1.46	1.12	1.14	1.08	1.26	1.26	MEAN	1.32	S.D.	0.47
DAF	1.46	1.50	1.22	1.23	0.97	1.19	1.10	1.28	MEAN	1.25	S.D.	0.17

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
19	PLATE	A	1.50	44,599	FAR

PMAX	1.78	1.27	1.79	1.20	1.77	1.16	1.77	1.19	MEAN	1.49	S.D.	0.56
PEFF	2.74	2.37	2.34	1.94	1.89	1.48	1.62	1.30	MEAN	1.95	S.D.	0.79
DAF	1.54	1.67	1.32	1.61	1.07	1.28	0.92	1.09	MEAN	1.34	S.D.	0.32

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
19	PLATE	A	2.00	49,599	NEAR

PMAX	1.63	0.86	1.62	0.84	1.62	0.91	1.61	1.02	MEAN	1.26	S.D.	0.55
PEFF	0.93	0.69	0.77	0.53	0.80	0.53	0.74	0.83	MEAN	0.73	S.D.	0.27
DAF	0.57	0.80	0.48	0.63	0.50	0.58	0.45	0.81	MEAN	0.60	S.D.	0.14

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
19	PLATE	A	2.00	49,599	FAR

PMAX	1.61	0.94	1.61	0.94	1.60	1.03	1.60	1.14	MEAN	1.31	S.D.	0.53
PEFF	1.14	0.94	0.96	0.82	0.81	0.74	0.75	0.72	MEAN	0.86	S.D.	0.30
DAF	0.71	0.99	0.59	0.87	0.51	0.72	0.47	0.63	MEAN	0.69	S.D.	0.18

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
19	PLATE	A	2.20	65,000	NEAR

PMAX	1.20	0.76	1.20	0.73	1.19	0.79	1.19	0.68	MEAN	0.95	S.D.	0.30
PEFF	0.95	0.93	0.89	0.85	0.83	0.77	0.68	0.62	MEAN	0.81	S.D.	0.28
DAF	0.80	1.23	0.75	1.16	0.69	1.10	0.57	0.91	MEAN	0.90	S.D.	0.24

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
19	PLATE	A	2.70	65,000	FAR

PMAX	1.20	0.91	1.19	0.89	1.19	0.85	1.19	0.81	MEAN	1.03	S.D.	0.37
PEFF	1.09	1.04	0.99	0.92	0.87	0.80	0.68	0.64	MEAN	0.88	S.D.	0.32
DAF	0.91	1.14	0.83	1.04	0.73	0.94	0.57	0.79	MEAN	0.87	S.D.	0.18

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	ELEMENT		TYPE		CONTRACTOR		MACH	ALTITUDE	FIELD			
	19		PLATE		B		1.30	38,000	NEAR			
PMAX	1.14	1.01	1.13	0.96	1.13	0.94	1.12	0.95	MEAN	1.05	S.D.	0.34
PEFF	2.20	1.88	1.97	1.61	1.71	1.45	1.76	1.52	MEAN	1.76	S.D.	0.61
DAF	1.93	1.87	1.74	1.68	1.51	1.55	1.56	1.61	MEAN	1.68	S.D.	0.15

	ELEMENT		TYPE		CONTRACTOR		MACH	ALTITUDE	FIELD			
	19		PLATE		B		1.30	38,000	FAR			
PMAX	1.77	1.30	1.76	1.24	1.76	1.21	1.75	1.22	MEAN	1.50	S.D.	0.55
PEFF	2.97	2.51	2.66	2.11	2.69	1.93	2.47	1.73	MEAN	2.38	S.D.	0.86
DAF	1.68	1.93	1.51	1.70	1.53	1.59	1.41	1.42	MEAN	1.60	S.D.	0.17

	ELEMENT		TYPE		CONTRACTOR		MACH	ALTITUDE	FIELD			
	19		PLATE		B		1.50	40,500	FAR			
PMAX	1.16	0.84	1.15	0.79	1.15	0.89	1.14	0.95	MEAN	1.01	S.D.	0.35
PEFF	1.22	0.96	1.01	0.94	0.96	1.00	1.04	1.21	MEAN	1.04	S.D.	0.35
DAF	1.05	1.15	0.87	1.18	0.84	1.12	0.91	1.28	MEAN	1.05	S.D.	0.16

	ELEMENT		TYPE		CONTRACTOR		MACH	ALTITUDE	FIELD			
	19		PLATE		B		1.50	40,500	FAR			
PMAX	1.78	1.03	1.77	0.98	1.77	1.06	1.76	1.13	MEAN	1.41	S.D.	0.59
PEFF	1.42	1.16	1.18	1.05	1.18	0.98	1.15	1.08	MEAN	1.15	S.D.	0.38
DAF	0.80	1.12	0.66	1.08	0.67	0.92	0.65	0.96	MEAN	0.86	S.D.	0.19

	ELEMENT		TYPE		CONTRACTOR		MACH	ALTITUDE	FIELD			
	19		PLATE		B		2.20	45,000	NEAR			
PMAX	1.53	0.93	1.53	1.01	1.53	1.09	1.53	1.18	MEAN	1.29	S.D.	0.48
PEFF	1.07	1.08	0.96	0.99	0.84	0.94	0.94	1.12	MEAN	0.99	S.D.	0.33
DAF	0.70	1.16	0.63	0.97	0.55	0.86	0.62	0.95	MEAN	0.81	S.D.	0.21

	ELEMENT		TYPE		CONTRACTOR		MACH	ALTITUDE	FIELD			
	19		PLATE		B		2.20	45,000	FAR			
PMAX	1.61	0.98	1.61	1.06	1.61	1.14	1.61	1.23	MEAN	1.36	S.D.	0.51
PEFF	1.04	1.02	1.07	0.99	0.88	0.82	0.84	0.93	MEAN	0.95	S.D.	0.31
DAF	0.64	1.04	0.67	0.93	0.54	0.72	0.52	0.76	MEAN	0.73	S.D.	0.18

	ELEMENT		TYPE		CONTRACTOR		MACH	ALTITUDE	FIELD			
	19		PLATE		B		2.70	59,000	NEAR			
PMAX	1.22	0.68	1.22	0.67	1.21	0.73	1.21	0.81	MEAN	0.97	S.D.	0.40
PEFF	0.64	0.55	0.61	0.57	0.62	0.66	0.76	0.86	MEAN	0.66	S.D.	0.23
DAF	0.52	0.81	0.50	0.86	0.51	0.91	0.63	1.07	MEAN	0.73	S.D.	0.22

	ELEMENT		TYPE		CONTRACTOR		MACH	ALTITUDE	FIELD			
	19		PLATE		B		2.70	59,000	FAR			
PMAX	1.19	0.69	1.19	0.68	1.19	0.75	1.18	0.83	MEAN	0.96	S.D.	0.39
PEFF	0.68	0.61	0.57	0.46	0.57	0.36	0.56	0.58	MEAN	0.55	S.D.	0.20
DAF	0.57	0.88	0.48	0.67	0.48	0.49	0.47	0.70	MEAN	0.59	S.D.	0.15

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ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
1	RACK	XB-70	1.22	27,000	DATA

PMAX	4.69
PEFF	6.00
DAF	1.28

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
1	RACK	XB-70	1.22	27,000	FAR

PMAX	5.58	3.01	5.58	3.06	5.58	3.06	5.58	3.10	MEAN	4.32	S.D.	1.90
PEFF	7.09	4.90	7.31	4.88	8.08	6.62	8.68	6.80	MEAN	6.80	S.D.	2.52
DAF	1.27	1.63	1.31	1.59	1.45	2.16	1.55	2.20	MEAN	1.64	S.D.	0.35

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
1	RACK	B-58	1.22	27,000	DATA

PMAX	4.56
PEFF	6.20
DAF	1.36

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
1	RACK	B-58	1.22	27,000	FAR

PMAX	4.36	2.42	4.36	2.47	4.36	2.47	4.36	2.51	MEAN	3.42	S.D.	1.47
PEFF	5.88	4.99	7.39	6.12	7.49	6.03	6.63	5.09	MEAN	6.20	S.D.	2.16
DAF	1.35	2.06	1.69	2.47	1.72	2.44	1.52	2.02	MEAN	1.91	S.D.	0.41

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
1	RACK	XB-70	1.40	38,700	DATA

PMAX	3.50
PEFF	4.91
DAF	1.40

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
1	RACK	XB-70	1.40	38,700	FAR

PMAX	3.65	2.30	3.64	2.30	3.62	2.25	3.61	2.30	MEAN	2.96	S.D.	1.17
PEFF	5.16	3.80	5.05	3.48	5.89	4.32	5.89	4.07	MEAN	4.71	S.D.	1.74
DAF	1.41	1.65	1.39	1.51	1.63	1.92	1.63	1.77	MEAN	1.61	S.D.	0.18

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
1	RACK	XB-70	1.86	48,000	DATA

PMAX	2.68
PEFF	3.67
DAF	1.37

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
1	RACK	XB-70	1.86	48,000	FAR

PMAX	2.90	1.61	2.89	1.60	2.88	1.59	2.86	1.59	MEAN	2.24	S.D.	0.98
PEFF	4.29	2.71	3.96	2.24	4.35	2.89	4.80	2.93	MEAN	3.52	S.D.	1.44
DAF	1.48	1.68	1.37	1.40	1.51	1.82	1.67	1.84	MEAN	1.60	S.D.	0.18

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
1	RACK	F-104	1.5	28,000	DATA

PMAX	1.85
PEFF	3.10
DAF	1.68

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
1	RACK	F-104	1.5	28,000	FAR

PMAX	2.44	1.44	2.43	1.44	2.42	1.54	2.41	1.36	MEAN	1.94	S.D.	0.80
PEFF	3.28	2.51	3.23	2.43	3.78	2.90	4.23	3.01	MEAN	3.17	S.D.	1.17
DAF	1.34	1.74	1.33	1.68	1.56	1.88	1.75	2.22	MEAN	1.69	S.D.	0.29

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
2	RACK	XB-70	1.22	27,000	DATA

PMAX	4.69
PEFF	8.18
DAF	1.74

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
2	RACK	XB-70	1.22	27,000	FAR

PMAX	5.58	3.18	5.58	3.18	5.58	3.18	5.58	3.18	MEAN	4.38	S.D.	1.87
PEFF	10.01	7.22	9.13	5.74	6.87	4.18	6.71	4.01	MEAN	6.73	S.D.	2.98
DAF	1.79	2.27	1.64	1.80	1.23	1.31	1.20	1.26	MEAN	1.56	S.D.	0.38

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
2	RACK	B-58	1.22	27,000	DATA

PMAX	4.56
PEFF	6.74
DAF	1.48

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
2	RACK	B-58	1.22	27,000	FAR

PMAX	4.36	2.54	4.36	2.54	4.36	2.54	4.36	2.54	MEAN	3.45	S.D.	1.45
PEFF	5.16	3.79	5.17	3.30	5.70	3.84	7.15	4.64	MEAN	4.84	S.D.	1.96
DAF	1.18	1.49	1.19	1.30	1.31	1.51	1.64	1.83	MEAN	1.43	S.D.	0.23

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
2	RACK	XB-70	1.40	38,700	DATA

PMAX	3.50
PEFF	5.18
DAF	1.48

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
2	RACK	XB-70	1.40	38,700	FAR

PMAX	3.64	2.04	3.64	2.04	3.62	2.02	3.61	1.71	MEAN	2.79	S.D.	1.25
PEFF	5.42	3.68	6.38	3.97	5.47	3.28	4.43	2.05	MEAN	4.34	S.D.	1.94
DAF	1.49	1.80	1.76	1.95	1.51	1.62	1.23	1.20	MEAN	1.57	S.D.	0.27

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
2	RACK	XB-70	1.86	48,000	DATA

PMAX	2.68
PEFF	3.16
DAF	1.18

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
2	RACK	XB-70	1.86	48,000	FAR

PMAX	2.69	1.24	2.66	1.20	2.64	1.16	2.86	0.91	MEAN	1.92	S.D.	1.04
PEFF	3.40	1.88	4.43	2.33	4.17	2.11	3.28	1.08	MEAN	2.84	S.D.	1.46
DAF	1.27	1.52	1.66	1.94	1.50	1.82	1.15	1.18	MEAN	1.51	S.D.	0.29

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
2	RACK	F-104	1.5	28,000	DATA

PMAX	1.85
PEFF	3.91
DAF	2.11

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
2	RACK	F-104	1.5	28,000	FAR

PMAX	2.44	1.38	2.43	1.21	2.42	1.19	2.41	1.17	MEAN	1.83	S.D.	0.86
PEFF	3.36	2.05	3.11	1.79	3.17	1.79	3.07	1.61	MEAN	2.49	S.D.	1.07
DAF	1.37	1.48	1.28	1.48	1.31	1.51	1.27	1.38	MEAN	1.38	S.D.	0.10

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	3	RACK	XB-70	1.22	27,000	DATA
PMAX	4.47					
PEFF	5.89					
DAF	1.32					

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	3	RACK	XB-70	1.22	27,000	FAR

PMAX	5.28	4.16	5.27	4.06	5.26	3.98	5.25	3.91	MEAN	4.65	S.D.	1.60
PEFF	9.29	7.19	10.28	7.49	10.48	7.49	9.61	6.66	MEAN	8.56	S.D.	3.08
DAF	1.76	1.73	1.95	1.85	1.99	1.88	1.83	1.70	MEAN	1.84	S.D.	0.10

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	3	RACK	B-58	1.22	27,000	DATA
PMAX	4.56					
PEFF	6.56					
DAF	1.44					

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	3	RACK	B-58	1.22	27,000	FAR

PMAX	4.05	3.25	4.08	3.23	4.07	3.17	4.07	3.11	MEAN	3.63	S.D.	1.23
PEFF	4.76	3.64	4.71	3.45	4.73	3.52	6.14	4.53	MEAN	4.44	S.D.	1.65
DAF	1.18	1.12	1.15	1.07	1.16	1.11	1.51	1.46	MEAN	1.22	S.D.	0.17

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	3	RACK	XB-70	1.40	38,700	DATA
PMAX	3.32					
PEFF	4.16					
DAF	1.25					

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	3	RACK	XB-70	1.40	38,700	FAR

PMAX	3.62	2.73	3.61	2.67	3.57	2.46	3.58	2.19	MEAN	3.06	S.D.	1.13
PEFF	4.76	3.45	4.39	3.06	4.33	2.87	4.61	3.12	MEAN	3.82	S.D.	1.43
DAF	1.31	1.26	1.22	1.15	1.21	1.17	1.29	1.42	MEAN	1.25	S.D.	0.09

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	3	RACK	XB-70	1.86	48,000	DATA
PMAX	2.78					
PEFF	3.19					
DAF	1.15					

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	3	RACK	XB-70	1.86	48,000	FAR

PMAX	2.69	1.78	2.66	1.64	2.56	1.38	2.72	1.65	MEAN	2.14	S.D.	0.88
PEFF	3.81	2.67	3.19	2.12	3.01	1.89	3.25	2.01	MEAN	2.74	S.D.	1.10
DAF	1.42	1.50	1.20	1.29	1.18	1.37	1.19	1.22	MEAN	1.30	S.D.	0.12

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	3	RACK	F-104	1.5	38,000	DATA
PMAX	1.79					
PEFF	3.08					
DAF	1.72					

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	3	RACK	F-104	1.5	38,000	FAR

PMAX	2.34	1.79	2.33	1.74	2.32	1.68	2.31	1.47	MEAN	2.00	S.D.	0.73
PEFF	4.71	3.49	5.04	3.65	5.26	3.78	5.20	3.53	MEAN	4.34	S.D.	1.58
DAF	2.01	1.95	2.16	2.10	2.27	2.25	2.24	2.40	MEAN	2.17	S.D.	0.15

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
4	RACK	XB-70	1.22	27,000	DATA

PMAX	4.49
PEFF	6.43
DAF	1.43

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
4	RACK	XB-70	1.22	27,000	FAR

PMAX	5.29	4.39	5.28	4.33	5.28	4.11	5.27	4.02	MEAN	4.75	S.D.	1.60
PEFF	11.03	8.67	9.69	7.54	7.22	5.32	7.01	4.70	MEAN	7.65	S.D.	3.19
DAF	2.08	1.98	1.83	1.74	1.37	1.29	1.33	1.17	MEAN	1.60	S.D.	0.35

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
4	RACK	B-58	1.22	27,000	DATA

PMAX	4.59
PEFF	8.92
DAF	1.94

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
4	RACK	B-58	1.22	27,000	FAR

PMAX	4.06	3.50	4.05	3.45	4.05	3.21	4.08	3.20	MEAN	3.70	S.D.	1.23
PEFF	5.81	4.73	7.39	5.98	8.34	6.38	8.95	6.57	MEAN	6.77	S.D.	2.53
DAF	1.43	1.35	1.82	1.73	2.06	1.98	2.19	2.05	MEAN	1.83	S.D.	0.31

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
4	RACK	XB-70	1.40	38,700	DATA

PMAX	3.34
PEFF	4.67
DAF	1.40

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
4	RACK	XB-70	1.40	38,700	FAR

PMAX	3.62	2.83	3.60	2.77	3.62	2.69	3.60	2.63	MEAN	3.17	S.D.	1.10
PEFF	4.77	3.51	5.97	4.73	6.94	5.16	6.77	4.92	MEAN	5.35	S.D.	2.03
DAF	1.32	1.24	1.66	1.71	1.92	1.92	1.88	1.87	MEAN	1.69	S.D.	0.27

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
4	RACK	XB-70	1.86	48,000	DATA

PMAX	2.82
PEFF	4.04
DAF	1.43

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
4	RACK	XB-70	1.86	48,000	FAR

PMAX	2.68	1.97	2.69	1.81	2.67	1.67	2.82	1.98	MEAN	2.29	S.D.	0.86
PEFF	3.50	2.50	3.91	2.90	4.77	3.47	5.34	3.82	MEAN	3.78	S.D.	1.50
DAF	1.31	1.27	1.45	1.60	1.78	2.08	1.89	1.93	MEAN	1.67	S.D.	0.30

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
4	RACK	F-104	1.5	28,000	DATA

PMAX	1.81
PEFF	4.22
DAF	2.33

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
4	RACK	F-104	1.5	28,000	FAR

PMAX	2.35	1.93	2.38	1.87	2.37	1.83	2.32	1.71	MEAN	2.09	S.D.	0.72
PEFF	5.86	4.55	5.89	4.46	5.84	4.29	5.54	3.92	MEAN	5.04	S.D.	1.78
DAF	2.47	2.37	2.48	2.38	2.47	2.34	2.38	2.29	MEAN	2.40	S.D.	0.07

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
5	RACK	XB-70	1.22	27,000	DATA

PMAX 5.44
PEFF 2.34
DAF 1.35

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
5	RACK	XB-70	1.22	27,000	FAR

PMAX	4.04	4.03	4.56	4.06	4.67	4.07	4.65	4.02	MEAN	4.33	S.D.	1.39
PEFF	2.12	1.63	2.03	1.53	1.93	1.43	1.80	1.29	MEAN	1.72	S.D.	0.62
DAF	0.47	0.41	0.45	0.38	0.41	0.35	0.39	0.32	MEAN	0.40	S.D.	0.05

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
5	RACK	B-58	1.22	27,000	DATA

PMAX 4.00
PEFF 1.91
DAF 0.48

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
5	RACK	B-58	1.22	27,000	FAR

PMAX	3.45	3.14	3.51	3.17	3.54	3.16	3.52	3.13	MEAN	3.33	S.D.	1.07
PEFF	1.90	1.49	1.85	1.42	1.80	1.36	1.73	1.28	MEAN	1.60	S.D.	0.56
DAF	0.55	0.47	0.53	0.45	0.51	0.43	0.49	0.41	MEAN	0.48	S.D.	0.05

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
5	RACK	XB-70	1.40	38,700	DATA

PMAX 2.91
PEFF 1.17
DAF 0.40

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
5	RACK	XB-70	1.40	38,700	FAR

PMAX	2.80	2.39	2.84	2.35	2.94	2.45	2.88	2.32	MEAN	2.62	S.D.	0.87
PEFF	1.15	0.87	1.06	0.81	1.10	0.83	1.12	0.84	MEAN	0.97	S.D.	0.34
DAF	0.41	0.36	0.37	0.35	0.37	0.34	0.39	0.36	MEAN	0.37	S.D.	0.02

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
5	RACK	XB-70	1.86	48,000	DATA

PMAX 1.80
PEFF 0.85
DAF 0.47

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
5	RACK	XB-70	1.86	48,000	FAR

PMAX	1.83	1.68	1.81	1.64	1.83	1.64	1.85	1.63	MEAN	1.74	S.D.	0.56
PEFF	0.97	0.74	0.90	0.67	0.83	0.63	0.84	0.62	MEAN	0.78	S.D.	0.28
DAF	0.53	0.44	0.50	0.41	0.46	0.38	0.45	0.38	MEAN	0.44	S.D.	0.05

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
5	RACK	F-104	1.5	28,000	DATA

PMAX 1.66
PEFF 1.17
DAF 0.71

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
5	RACK	F-104	1.5	28,000	FAR

PMAX	1.78	1.61	1.75	1.55	1.74	1.55	1.76	1.52	MEAN	1.66	S.D.	0.53
PEFF	1.37	1.09	1.37	1.06	1.37	1.05	1.36	1.02	MEAN	1.21	S.D.	0.42
DAF	0.77	0.68	0.78	0.68	0.79	0.68	0.77	0.67	MEAN	0.73	S.D.	0.05

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
6	RACK	XB-70	1.22	27,000	DATA

PMAX	4.96
PEFF	4.41
DAF	0.89

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
6	RACK	XB-70	1.22	27,000	FAR

PMAX	4.78	4.27	4.76	4.27	4.90	4.15	4.89	4.16	MEAN 4.52	S.D.	1.46
PEFF	3.43	3.22	3.13	2.94	2.91	2.61	3.01	2.49	MEAN 2.97	S.D.	0.98
DAF	0.74	0.75	0.66	0.69	0.59	0.63	0.62	0.60	MEAN 0.66	S.D.	0.06

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
6	RACK	B-58	1.22	27,000	DATA

PMAX	4.28
PEFF	3.00
DAF	0.70

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
6	RACK	B-58	1.22	27,000	FAR

PMAX	3.77	3.77	3.73	3.73	3.71	3.61	3.70	3.52	MEAN 3.69	S.D.	1.17
PEFF	3.56	3.32	3.40	3.16	3.16	2.94	2.95	2.74	MEAN 3.15	S.D.	1.03
DAF	0.94	0.88	0.91	0.85	0.85	0.81	0.80	0.78	MEAN 0.85	S.D.	0.06

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
6	RACK	XB-70	1.40	38,700	DATA

PMAX	3.30
PEFF	2.57
DAF	0.78

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
6	RACK	XB-70	1.40	38,700	FAR

PMAX	3.14	2.99	3.20	3.03	3.29	3.04	3.27	3.01	MEAN 3.12	S.D.	0.99
PEFF	2.22	1.92	2.30	1.98	2.39	2.06	2.45	2.10	MEAN 2.18	S.D.	0.71
DAF	0.71	0.64	0.72	0.66	0.73	0.68	0.75	0.70	MEAN 0.70	S.D.	0.04

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
6	RACK	XB-70	1.86	48,000	DATA

PMAX	2.25
PEFF	1.88
DAF	0.83

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
6	RACK	XB-70	1.86	48,000	FAR

PMAX	2.30	2.21	2.34	2.24	2.34	2.23	2.36	2.23	MEAN 2.28	S.D.	0.72
PEFF	1.72	1.49	1.79	1.55	1.84	1.59	1.86	1.60	MEAN 1.68	S.D.	0.55
DAF	0.75	0.67	0.76	0.69	0.79	0.71	0.79	0.72	MEAN 0.74	S.D.	0.04

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
6	RACK	F-104	1.5	28,000	DATA

PMAX	2.13
PEFF	2.53
DAF	1.19

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
6	RACK	F-104	1.5	28,000	FAR

PMAX	2.66	2.53	2.63	2.48	2.53	2.42	2.68	2.49	MEAN 2.55	S.D.	0.81
PEFF	2.98	2.74	2.94	2.68	2.90	2.65	2.86	2.61	MEAN 2.80	S.D.	0.89
DAF	1.12	1.08	1.12	1.08	1.15	1.09	1.07	1.04	MEAN 1.10	S.D.	0.03

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	7	LATE	XB-70	1.22	27,000	DA[illegible]
PMAX	4.59					
PEFF	6.15					
DAF	1.34					

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD						
	7	PLATE	XB-70	1.22	27,000	FAR						
PMAX	5.49	3.43	5.49	3.33	5.48	3.23	5.48	3.13	MEAN	4.38	S.D.	1.81
PEFF	7.27	5.06	7.07	4.55	7.06	4.15	7.04	4.06	MEAN	5.78	S.D.	2.32
DAF	1.32	1.48	1.29	1.37	1.29	1.29	1.28	1.30	MEAN	1.33	S.D.	0.07

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	7	PLATE	B-58	1.22	27,000	DATA
PMAX	4.48					
PEFF	6.16					
DAF	1.38					

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD						
	7	PLATE	B-58	1.22	27,000	FAR						
PMAX	4.27	2.15	4.26	2.37	4.26	2.29	4.25	2.21	MEAN	3.30	S.D.	1.46
PEFF	5.19	3.25	5.20	2.85	5.20	2.77	5.26	2.83	MEAN	4.07	S.D.	1.77
DAF	1.22	1.32	1.22	1.20	1.22	1.21	1.24	1.28	MEAN	1.24	S.D.	0.04

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	7	PLATE	XB-70	1.40	38,700	DATA
PMAX	3.46					
PEFF	4.73					
DAF	1.37					

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD						
	7	PLATE	XB-70	1.40	38,700	FAR						
PMAX	3.62	2.25	3.60	2.10	3.92	2.38	3.92	2.31	MEAN	3.01	S.D.	1.24
PEFF	4.93	3.32	4.82	3.12	5.12	3.17	5.08	3.12	MEAN	4.08	S.D.	1.60
DAF	1.36	1.48	1.34	1.49	1.31	1.33	1.30	1.35	MEAN	1.37	S.D.	0.07

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	7	PLATE	XB-70	1.86	48,000	DATA
PMAX	2.65					
PEFF	3.77					
DAF	1.42					

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD						
	7	PLATE	XB-70	1.86	48,000	FAR						
PMAX	2.88	1.79	2.87	1.67	2.85	1.63	2.84	1.59	MEAN	2.27	S.D.	0.95
PEFF	3.93	2.63	3.84	2.49	3.92	2.50	3.97	2.48	MEAN	3.22	S.D.	1.25
DAF	1.36	1.47	1.34	1.49	1.37	1.53	1.40	1.56	MEAN	1.44	S.D.	0.08

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	7	PLATE	F-104	1.5	28,000	DATA
PMAX	1.69					
PEFF	3.31					
DAF	1.96					

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD						
	7	PLATE	F-104	1.5	28,000	FAR						
PMAX	2.30	1.30	2.29	1.27	2.27	1.25	2.25	1.26	MEAN	1.77	S.D.	0.77
PEFF	2.90	1.99	2.72	1.74	2.76	1.55	2.75	1.39	MEAN	2.23	S.D.	0.93
DAF	1.26	1.54	1.19	1.37	1.21	1.24	1.22	1.11	MEAN	1.27	S.D.	0.13

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	8	PLATE	XB-70	1.22	27,000	DATA
PMAX	4.22					
PEFF	5.93					
DAF	1.40					

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	8	PLATE	XB-70	1.22	27,000	FAR

PMAX	5.04	3.00	5.02	2.89	4.99	2.81	4.97	2.73	MEAN	3.93	S.D.	1.68
PEFF	6.97	4.97	6.68	4.47	6.81	4.15	6.88	4.10	MEAN	5.63	S.D.	2.20
DAF	1.38	1.65	1.33	1.55	1.36	1.48	1.38	1.50	MEAN	1.46	S.D.	0.11

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	8	PLATE	B-58	1.22	27,000	DATA
PMAX	4.09					
PEFF	5.83					
DAF	1.43					

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	8	PLATE	B-58	1.22	27,000	FAR

PMAX	3.82	2.14	3.80	2.09	3.78	2.06	3.76	2.07	MEAN	2.94	S.D.	1.29
PEFF	4.93	3.16	4.90	2.84	5.00	2.81	5.03	2.81	MEAN	3.94	S.D.	1.65
DAF	1.29	1.48	1.29	1.36	1.32	1.36	1.34	1.36	MEAN	1.35	S.D.	0.06

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	8	PLATE	XB-70	1.40	38,700	DATA
PMAX	3.08					
PEFF	4.35					
DAF	1.42					

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	8	PLATE	XB-70	1.40	38,700	FAR

PMAX	3.11	1.92	3.07	1.87	3.30	1.90	3.27	1.86	MEAN	2.54	S.D.	1.06
PEFF	4.19	2.93	4.02	2.74	4.55	2.97	4.48	2.91	MEAN	3.60	S.D.	1.37
DAF	1.35	1.53	1.31	1.46	1.38	1.56	1.37	1.56	MEAN	1.44	S.D.	0.10

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	8	PLATE	XB-70	1.86	48,000	DATA
PMAX	2.29					
PEFF	3.02					
DAF	1.32					

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	8	PLATE	XB-70	1.86	48,000	FAR

PMAX	2.26	1.52	2.11	1.46	2.40	1.46	2.37	1.43	MEAN	1.88	S.D.	0.74
PEFF	2.88	2.07	2.74	2.03	3.20	2.16	3.16	2.12	MEAN	2.54	S.D.	0.94
DAF	1.27	1.36	1.30	1.38	1.33	1.49	1.33	1.49	MEAN	1.37	S.D.	0.08

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	8	PLATE	F-104	1.5	28,000	DATA
PMAX	1.30					
PEFF	2.40					
DAF	1.84					

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	8	PLATE	F-104	1.5	28,000	FAR

PMAX	1.76	1.14	1.73	1.11	1.70	1.10	1.67	1.11	MEAN	1.42	S.D.	0.55
PEFF	2.30	1.73	2.13	1.47	2.09	1.31	2.06	1.13	MEAN	1.78	S.D.	0.70
DAF	1.30	1.52	1.23	1.32	1.23	1.18	1.23	1.02	MEAN	1.25	S.D.	0.14

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	9	ROOF	XB-70	1.22	27,000	DATA
PMAX	3.15					
PEFF	0.					
DAF	0.					

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	9	ROOF	XB-70	1.22	27,000	FAR

PMAX	3.03	2.42	3.07	2.23	3.12	2.11	4.26	2.05	MEAN	2.79	S.D.	1.15
PEFF	5.28	5.08	5.61	5.23	5.54	4.98	5.09	4.44	MEAN	5.15	S.D.	1.66
DAF	1.74	2.10	1.83	2.34	1.77	2.36	1.19	2.16	MEAN	1.94	S.D.	0.39

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	9	ROOF	B-58	1.22	27,000	DATA
PMAX	2.88					
PEFF	3.39					
DAF	1.18					

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	9	ROOF	B-58	1.22	27,000	FAR

PMAX	2.26	1.79	2.30	1.67	2.33	1.60	3.23	1.62	MEAN	2.10	S.D.	0.86
PEFF	3.70	3.10	3.48	2.84	3.29	2.87	3.32	3.12	MEAN	3.22	S.D.	1.05
DAF	1.64	1.73	1.52	1.70	1.41	1.79	1.03	1.93	MEAN	1.59	S.D.	0.28

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	9	ROOF	XB-70	1.40	38,700	DATA
PMAX	1.91					
PEFF	2.60					
DAF	1.36					

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	9	ROOF	XB-70	1.40	38,700	FAR

PMAX	2.04	1.63	2.01	1.52	1.98	1.47	2.40	1.46	MEAN	1.82	S.D.	0.66
PEFF	3.06	2.93	2.50	2.25	2.51	2.12	2.69	2.11	MEAN	2.52	S.D.	0.87
DAF	1.50	1.80	1.24	1.48	1.27	1.44	1.11	1.44	MEAN	1.41	S.D.	0.21

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	9	ROOF	XB-70	1.86	48,000	DATA
PMAX	1.71					
PEFF	2.06					
DAF	1.21					

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	9	ROOF	XB-70	1.86	48,000	FAR

PMAX	1.63	1.44	1.61	1.32	1.58	1.23	1.94	1.17	MEAN	1.4	S.D.	0.53
PEFF	2.61	2.52	2.12	1.98	2.02	1.80	2.15	1.79	MEAN	2.12	S.D.	0.73
DAF	1.60	1.75	1.32	1.50	1.27	1.46	1.11	1.53	MEAN	1.44	S.D.	0.20

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	9	ROOF	F-104	1.5	28,000	DATA
PMAX	0.99					
PEFF	1.79					
DAF	1.80					

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ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
10	ROOF	XB-70	1.22	27,000	DATA

PMAX	1.84
PEFF	1.78
DAF	0.97

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
10	ROOF	XB-70	1.22	27,000	FAR

PMAX	2.34	2.34	2.17	2.16	2.16	2.04	2.15	1.99	MEAN	2.17	S.D. 0.69
PEFF	2.49	2.67	2.36	2.52	2.23	2.37	2.11	2.23	MEAN	2.37	S.D. 0.77
DAF	1.06	1.14	1.09	1.16	1.03	1.16	0.98	1.12	MEAN	1.09	S.D. 0.06

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
10	ROOF	B-58	1.22	27,000	DATA

PMAX	1.74
PEFF	1.40
DAF	0.80

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
10	ROOF	B-58	1.22	27,000	FAR

PMAX	1.73	1.73	1.65	1.63	1.64	1.59	1.62	1.60	MEAN	1.65	S.D. 0.52
PEFF	1.64	1.85	1.58	1.78	1.56	1.73	1.57	1.70	MEAN	1.68	S.D. 0.54
DAF	0.95	1.07	0.96	1.09	0.95	1.09	0.97	1.06	MEAN	1.02	S.D. 0.07

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
10	ROOF	XB-70	1.40	38,700	DATA

PMAX	1.44
PEFF	1.52
DAF	1.06

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
10	ROOF	XB-70	1.40	38,700	FAR

PMAX	1.58	1.54	1.57	1.44	1.56	1.41	1.56	1.41	MEAN	1.51	S.D. 0.48
PEFF	1.91	1.95	1.78	1.80	1.71	1.70	1.59	1.56	MEAN	1.75	S.D. 0.57
DAF	1.21	1.27	1.13	1.25	1.09	1.21	1.02	1.11	MEAN	1.16	S.D. 0.09

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
10	ROOF	XB-70	1.86	48,000	DATA

PMAX	1.23
PEFF	0.92
DAF	0.75

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
10	ROOF	XB-70	1.86	48,000	FAR

PMAX	1.31	1.31	1.25	1.22	1.24	1.14	1.24	1.09	MEAN	1.22	S.D. 0.39
PEFF	1.66	1.69	1.61	1.63	1.51	1.51	1.41	1.40	MEAN	1.55	S.D. 0.50
DAF	1.27	1.30	1.29	1.33	1.22	1.33	1.14	1.29	MEAN	1.27	S.D. 0.06

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
10	ROOF	F-104	1.5	28,000	DATA

PMAX	0.97
PEFF	0.77
DAF	0.80

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
10	ROOF	F-104	1.5	28,000	FAR

PMAX	1.09	1.09	1.06	1.06	1.03	1.03	1.05	1.05	MEAN	1.06	S.D. 0.33
PEFF	1.01	1.18	1.01	1.20	1.01	1.21	1.01	1.20	MEAN	1.10	S.D. 0.36
DAF	0.93	1.08	0.95	1.13	0.98	1.17	0.96	1.15	MEAN	1.04	S.D. 0.10

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ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
11	PLATE	XB-70	1.22	27,000	DATA

PMAX 4.59
PEFF 9.39
DAF 2.04

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
11	PLATE	XB-70	1.22	27,000	FAR

PMAX 5.49 2.85 5.49 2.76 5.48 2.70 5.48 2.67 MEAN 4.11 S.D. 1.94
PEFF 9.25 3.91 9.35 3.76 11.07 3.57 9.06 3.05 MEAN 6.63 S.D. 3.90
DAF 1.69 1.37 1.70 1.36 2.02 1.32 1.65 1.14 MEAN 1.53 S.D. 0.28

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
11	PLATE	B-58	1.22	27,000	DATA

PMAX 4.34
PEFF 9.20
DAF 2.12

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
11	PLATE	B-58	1.22	27,000	FAR

PMAX 4.27 2.16 4.26 2.11 4.26 2.08 4.25 2.09 MEAN 3.18 S.D. 1.51
PEFF 7.51 2.63 8.15 2.72 7.08 2.66 8.77 2.43 MEAN 5.28 S.D. 3.24
DAF 1.76 1.27 1.91 1.28 1.66 1.28 2.06 1.16 MEAN 1.56 S.D. 0.33

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
11	PLATE	XB-70	2.40	38,700	DATA

PMAX 3.39
PEFF 5.20
DAF 1.54

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
11	PLATE	XB-70	2.40	38,700	FAR

PMAX 3.69 1.95 3.69 1.90 3.51 1.96 3.92 1.90 MEAN 2.82 S.D. 1.31
PEFF 5.32 2.60 5.39 2.48 6.66 2.52 6.73 2.14 MEAN 4.31 S.D. 2.41
DAF 1.64 1.33 1.53 1.31 1.70 1.28 1.72 1.12 MEAN 1.47 S.D. 0.21

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
11	PLATE	XB-70	1.86	48,000	DATA

PMAX 2.59
PEFF 4.19
DAF 1.62

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
11	PLATE	XB-70	1.86	48,000	FAR

PMAX 2.82 1.63 2.80 1.56 2.59 1.52 2.77 1.49 MEAN 2.17 S.D. 0.95
PEFF 5.25 2.08 4.28 1.98 4.96 1.86 4.45 1.38 MEAN 3.28 S.D. 1.88
DAF 1.86 1.28 1.53 1.27 1.78 1.22 1.61 0.93 MEAN 1.43 S.D. 0.31

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
11	PLATE	F-104	1.5	28,000	DATA

PMAX 1.66
PEFF 2.79
DAF 1.67

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
11	PLATE	F-104	1.5	28,000	FAR

PMAX 2.35 1.30 2.23 1.27 2.21 1.25 2.19 1.26 MEAN 1.74 S.D. 0.75
PEFF 4.71 1.82 3.47 1.57 3.54 1.51 3.61 1.27 MEAN 2.65 S.D. 1.53
DAF 2.05 1.40 1.55 1.24 1.60 1.05 1.65 1.01 MEAN 1.44 S.D. 0.35

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	12	PLATE	XB-70	1.22	27,000	DATA
PMAX	3.98					
PEFF	3.64					
DAF	0.91					

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	12	PLATE	XB-70	1.22	27,000	FAR

PMAX	4.77	2.56	4.77	2.41	4.76	2.30	4.75	2.26	MEAN	3.57	S.D.	1.69
PEFF	7.04	6.01	6.05	5.16	5.33	4.15	4.95	3.73	MEAN	5.30	S.D.	1.98
DAF	1.47	2.35	1.27	2.14	1.12	1.80	1.04	1.65	MEAN	1.61	S.D.	0.47

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	12	PLATE	B-58	1.22	27,000	DATA
PMAX	3.72					
PEFF	5.72					
DAF	1.54					

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	12	PLATE	B-58	1.22	27,000	FAR

PMAX	3.69	1.89	3.68	1.80	3.67	1.76	3.67	1.77	MEAN	2.74	S.D.	1.31
PEFF	6.79	5.76	6.49	5.26	6.06	4.72	5.39	4.05	MEAN	5.56	S.D.	1.97
DAF	1.84	3.04	1.76	2.92	1.65	2.68	1.47	2.28	MEAN	2.21	S.D.	0.61

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	12	PLATE	XB-70	1.40	38,700	DATA
PMAX	2.94					
PEFF	3.23					
DAF	1.10					

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	12	PLATE	XB-70	1.40	38,700	FAR

PMAX	3.09	1.72	3.07	1.63	3.41	1.66	3.41	1.64	MEAN	2.45	S.D.	1.14
PEFF	3.79	3.26	3.58	3.02	3.52	2.86	3.29	2.93	MEAN	3.28	S.D.	1.08
DAF	1.23	1.90	1.17	1.85	1.03	1.72	0.97	1.79	MEAN	1.46	S.D.	0.39

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	12	PLATE	XB-70	1.86	48,000	DATA
PMAX	2.25					
PEFF	2.42					
DAF	1.07					

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	12	PLATE	XB-70	1.86	48,000	FAR

PMAX	2.46	1.49	2.44	1.39	2.43	1.32	2.41	1.27	MEAN	1.90	S.D.	0.83
PEFF	3.20	2.79	3.04	2.60	2.89	2.43	2.72	2.25	MEAN	2.74	S.D.	0.92
DAF	1.30	1.87	1.25	1.87	1.19	1.85	1.13	1.77	MEAN	1.53	S.D.	0.34

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	12	PLATE	F-104	1.5	28,000	DATA
PMAX	1.33					
PEFF	0.65					
DAF	0.49					

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	12	PLATE	F-104	1.5	28,000	FAR

PMAX	.86	1.13	1.84	1.08	1.82	1.06	1.79	1.07	MEAN	1.46	S.D.	0.60
PEFF	..17	1.37	1.22	1.34	1.29	1.34	1.36	1.42	MEAN	1.31	S.D.	0.42
DAF	0.63	1.21	0.66	1.24	0.71	1.26	0.76	1.33	MEAN	0.98	S.D.	0.31

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	13	PLATE	XB-70	1.22	27,000	DATA
PMAX	3.67					
PEFF	2.36					
DAF	0.64					

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	13	PLATE	XB-70	1.22	27,000	FAR

PMAX	4.42	2.42	4.40	2.23	4.39	2.11	4.38	2.05	MEAN	3.30	S.D.	1.56
PEFF	3.68	3.62	3.65	3.48	3.61	3.32	3.52	3.13	MEAN	3.50	S.D.	1.12
DAF	0.83	1.50	0.83	1.56	0.82	1.58	0.80	1.52	MEAN	1.18	S.D.	0.38

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	13	PLATE	B-58	1.22	27,000	DATA
PMAX	3.41					
PEFF	1.45					
DAF	0.43					

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	13	PLATE	B-58	1.22	27,000	FAR

PMAX	3.41	1.77	3.39	1.65	3.38	1.60	3.37	1.62	MEAN	2.52	S.D.	1.21
PEFF	1.83	2.08	1.83	2.01	1.83	1.93	1.85	1.87	MEAN	1.90	S.D.	0.61
DAF	0.54	1.17	0.54	1.22	0.54	1.21	0.55	1.16	MEAN	0.87	S.D.	0.35

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	13	PLATE	XB-70	1.40	38,700	DATA
PMAX	2.72					
PEFF	3.97					
DAF	1.46					

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	13	PLATE	XB-70	1.40	38,700	FAR

PMAX	2.86	1.60	2.84	1.50	2.82	1.44	2.80	1.44	MEAN	2.16	S.D.	0.98
PEFF	4.40	4.02	4.55	4.03	4.13	3.49	3.63	2.88	MEAN	3.89	S.D.	1.34
DAF	1.54	2.51	1.60	2.69	1.47	2.42	1.30	2.00	MEAN	1.94	S.D.	0.54

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	13	PLATE	XB-70	1.86	48,000	DATA
PMAX	2.08					
PEFF	2.80					
DAF	1.35					

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	13	PLATE	XB-70	1.86	48,000	FAR

PMAX	2.28	1.42	2.26	1.30	2.25	1.21	2.23	1.16	MEAN	1.76	S.D.	0.76
PEFF	4.23	3.97	4.46	4.09	4.28	3.85	3.98	3.46	MEAN	4.04	S.D.	1.31
DAF	1.86	2.79	1.97	3.13	1.90	3.17	1.78	2.98	MEAN	2.45	S.D.	0.62

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	13	PLATE	F-104	1.5	28,000	DATA
PMAX	1.16					
PEFF	0.19					
DAF	0.17					

	ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
	13	PLATE	F-104	1.5	28,000	FAR

PMAX	1.67	1.05	1.64	0.99	1.62	0.96	1.59	0.97	MEAN	1.31	S.D.	0.53
PEFF	0.36	0.67	0.41	0.69	0.47	0.73	0.53	0.79	MEAN	0.58	S.D.	0.24
DAF	0.22	0.64	0.25	0.70	0.29	0.76	0.34	0.81	MEAN	0.50	S.D.	0.25

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
14	PLATE	XB-70	1.22	27,000	DATA

PMAX	4.12
PEFF	8.32
DAF	2.02

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
14	PLATE	XB-70	1.22	27,000	FAR

PMAX	4.94	2.76	4.91	2.67	4.88	2.61	4.85	2.58	MEAN	3.77	S.D.	1.68
PEFF	7.95	3.59	7.50	3.41	9.09	3.18	7.80	2.51	MEAN	5.63	S.D.	3.19
DAF	1.61	1.30	1.53	1.28	1.86	1.22	1.61	0.97	MEAN	1.42	S.D.	0.28

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
14	PLATE	B-58	1.22	27,000	DATA

PMAX	3.68
PEFF	7.29
DAF	1.98

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
14	PLATE	B-58	1.22	27,000	FAR

PMAX	3.74	2.14	3.71	2.09	3.69	2.06	3.66	2.07	MEAN	2.89	S.D.	1.25
PEFF	6.90	2.63	7.17	2.45	5.85	2.36	6.14	1.81	MEAN	4.42	S.D.	2.66
DAF	1.85	1.23	1.93	1.18	1.59	1.14	1.68	0.87	MEAN	1.43	S.D.	0.38

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
14	PLATE	XB-70	1.40	38,700	DATA

PMAX	2.93
PEFF	3.52
DAF	1.20

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
14	PLATE	XB-70	1.40	38,700	FAR

PMAX	2.76	1.87	2.75	1.82	3.13	1.83	2.82	1.83	MEAN	2.35	S.D.	0.92
PEFF	3.34	2.09	3.37	1.93	3.53	2.16	3.25	2.34	MEAN	2.75	S.D.	1.09
DAF	1.21	1.11	1.23	1.06	1.13	1.18	1.15	1.28	MEAN	1.17	S.D.	0.07

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
14	PLATE	XB-70	1.86	48,000	DATA

PMAX	2.09
PEFF	2.43
DAF	1.16

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
14	PLATE	XB-70	1.86	48,000	FAR

PMAX	2.11	1.52	2.11	1.46	2.17	1.46	2.17	1.43	MEAN	1.80	S.D.	0.67
PEFF	3.80	1.70	3.60	1.64	2.65	1.41	2.59	1.33	MEAN	2.34	S.D.	1.21
DAF	1.80	1.12	1.71	1.12	1.22	0.97	1.19	0.93	MEAN	1.26	S.D.	0.32

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
14	PLATE	F-104	1.5	28,000	DATA

PMAX	1.18
PEFF	1.64
DAF	1.39

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
14	PLATE	F-104	1.5	28,000	FAR

PMAX	1.52	1.14	1.51	1.11	1.50	1.10	1.49	1.11	MEAN	1.31	S.D.	0.46
PEFF	2.13	1.56	2.13	1.47	2.09	1.38	2.32	1.11	MEAN	1.77	S.D.	0.71
DAF	1.40	1.37	1.41	1.32	1.39	1.25	1.56	1.01	MEAN	1.34	S.D.	0.16

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
15	PLATE	XB-70	1.22	27,000	DATA

PMAX	3.23
PEFF	0.
DAF	0.

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
15	PLATE	XB-70	1.22	27,000	FAR

PMAX	4.27	2.48	4.24	2.33	4.21	2.23	4.18	2.18	MEAN 3.27	S.D.	1.45
PEFF	6.81	5.90	5.86	5.05	5.10	4.07	4.74	3.66	MEAN 5.15	S.D.	1.91
DAF	1.59	2.38	1.38	2.17	1.21	1.83	1.13	1.68	MEAN 1.67	S.D.	0.44

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
15	PLATE	B-58	1.22	27,000	DATA

PMAX	3.11
PEFF	5.46
DAF	1.76

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
15	PLATE	B-58	1.22	27,000	FAR

PMAX	3.20	1.86	3.17	1.78	3.14	1.75	3.12	1.76	MEAN 2.47	S.D.	1.06
PEFF	6.57	5.65	6.25	5.15	5.80	4.62	5.13	3.94	MEAN 5.39	S.D.	1.90
DAF	2.05	3.03	1.97	2.89	1.84	2.64	1.66	2.25	MEAN 2.29	S.D.	0.51

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
15	PLATE	XB-70	1.40	38,700	DATA

PMAX	2.54
PEFF	3.07
DAF	1.21

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
15	PLATE	XB-70	1.40	38,700	FAR

PMAX	2.41	1.65	2.39	1.57	2.72	1.55	2.48	1.55	MEAN 2.04	S.D.	0.81
PEFF	3.53	3.04	3.30	2.79	3.25	2.67	3.01	2.82	MEAN 3.05	S.D.	1.00
DAF	1.46	1.84	1.38	1.78	1.20	1.72	1.21	1.82	MEAN 1.55	S.D.	0.27

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
15	PLATE	XB-70	1.86	48,000	DATA

PMAX	1.81
PEFF	2.20
DAF	1.21

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
15	PLATE	XB-70	1.86	48,000	FAR

PMAX	1.83	1.39	1.81	1.30	1.89	1.26	1.88	1.22	MEAN 1.57	S.D.	0.58
PEFF	2.89	2.49	2.70	2.29	2.66	2.24	2.48	2.03	MEAN 2.47	S.D.	0.83
DAF	1.58	1.79	1.49	1.75	1.41	1.77	1.32	1.67	MEAN 1.60	S.D.	0.18

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
15	PLATE	F-104	1.5	28,000	DATA

PMAX	0.89
PEFF	0.71
DAF	0.80

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
15	PLATE	F-104	1.5	28,000	FAR

PMAX	1.19	1.00	1.17	0.95	1.15	0.93	1.14	0.94	MEAN 1.06	S.D.	0.35
PEFF	1.01	1.17	1.07	1.17	1.23	1.31	1.40	1.47	MEAN 1.23	S.D.	0.42
DAF	0.85	1.18	0.92	1.23	1.07	1.41	1.23	1.56	MEAN 1.18	S.D.	0.24

PMAX 3.[illegible]
PEFF 2.28
DAF 0.[illegible]0

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
16	PLATE	XB-70	1.22	27,000	FAR

PMAX	3.55	2.28	3.50	2.10	3.45	1.98	3.65	1.98	MEAN	2.84	S.D.	1.20
PEFF	3.41	3.37	3.37	3.24	3.31	3.08	3.38	3.05	MEAN	3.28	S.D.	1.04
DAF	0.96	1.48	0.96	1.54	0.96	1.56	0.88	1.54	MEAN	1.24	S.D.	0.32

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
16	PLATE	B-58	1.22	27,000	DATA

PMAX 2.84
PEFF 1.36
DAF 0.48

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
16	PLATE	B-58	1.2[illegible]	27,000	FAR

PMAX	2.56	1.68	2.52	1.58	2.47	1.54	2.[illegible]4	1.60	MEAN	2.10	S.D.	0.85
PEFF	1.65	1.89	1.64	1.8[illegible]	1.65	1.76	1.76	1.85	MEAN	1.75	S.D.	0.56
DAF	0.65	1.13	0.65	1.15	0.67	1.14	0.62	1.16	MEAN	0.90	S.D.	0.27

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
16	PLATE	XB-70	1.40	38,700	DATA

PMAX 2.13
PEFF 3.52
DAF 1.65

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
16	PLATE	XB-70	1.40	38,700	FAR

PMAX	2.24	1.54	2.21	1.44	2.19	1.39	2.17	1.38	MEAN	1.82	S.D.	0.70
PEFF	4.03	3.65	4.12	3.59	3.68	3.04	3.15	2.36	MEAN	3.45	S.D.	1.23
DAF	1.80	2.38	1.86	2.50	1.68	2.19	1.45	1.71	MEAN	1.95	S.D.	0.37

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
16	PLATE	XB-70	1.86	48,000	DATA

PMAX 1.54
PEFF 2.31
DAF 1.50

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
16	PLATE	XB-70	1.86	48,000	FAR

PMAX	1.60	1.31	1.58	1.20	1.64	1.14	1.63	1.09	MEAN	1.40	S.D.	0.50
PEFF	3.[illegible]5	3.38	3.72	3.30	3.76	3.30	3.42	2.88	MEAN	3.43	S.D.	1.12
DAF	2.28	2.59	2.36	2.76	2.29	2.91	2.11	2.65	MEAN	2.49	S.D.	0.27

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
16	PLATE	F-104	1.5	28,000	DATA

PMAX 0.74
PEFF 0.19
DAF 0.25

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
16	PLATE	F-104	1.5	28,000	FAR

PMAX	1.01	0.86	1.00	0.81	0.99	0.79	0.97	0.86	MEAN	0.91	S.D.	0.30
PEFF	0.36	0.64	0.41	0.68	0.46	0.72	0.53	0.79	MEAN	0.57	S.D.	0.24
DAF	0.35	0.74	0.41	0.83	0.46	0.91	0.55	0.92	MEAN	0.65	S.D.	0.23

[redacted]

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
17	PLATE	[illegible]	[illegible]	[illegible]	[illegible]

PMAX 3.62
PEFF 8.80
DAF 2.43

MENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
17	PLATE	XB-70	1.22	27,000	FAR

PMAX	2.80	2.02	2.82	2.01	2.81	1.97	2.88	2.02	MEAN 2.41	S.D.	0.88
PEFF	7.47	3.03	7.63	2.76	8.30	2.61	6.72	2.52	MEAN 5.13	S.D.	3.03
DAF	2.67	1.50	2.71	1.37	2.96	1.33	2.33	1.25	MEAN 2.01	S.D.	0.72

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
17	PLATE	B-58	1.22	27,000	DATA

PMAX 2.18
PEFF 7.90
DAF 3.62

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
17	PLATE	B-58	1.22	27,000	FAR

PMAX	2.18	1.40	2.17	1.43	2.17	1.41	2.16	1.49	MEAN 1.80	S.D.	0.69
PEFF	6.42	2.18	6.82	2.34	4.70	1.90	7.30	1.77	MEAN 4.18	S.D.	2.71
DAF	2.95	1.55	3.14	1.63	2.17	1.34	3.38	1.19	MEAN 2.17	S.D.	0.87

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
17	PLATE	XB-70	1.40	38,700	DATA

PMAX 1.91
PEFF 3.23
DAF 1.69

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
17	PLATE	XB-70	1.40	38,700	FAR

PMAX	2.01	1.18	2.01	1.19	2.00	1.20	2.00	1.23	MEAN 1.60	S.D.	0.66
PEFF	3.39	1.61	4.18	1.68	3.42	1.49	4.63	1.49	MEAN 2.74	S.D.	1.56
DAF	1.69	1.36	2.09	1.41	1.71	1.24	2.32	1.21	MEAN 1.63	S.D.	0.40

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
17	PLATE	XB-70	1.86	48,000	DATA

PMAX 1.54
PEFF 3.74
DAF 2.43

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
17	PLATE	XB-70	1.86	48,000	FAR

PMAX	1.59	0.83	1.59	0.86	1.59	0.90	1.59	0.92	MEAN 1.23	S.D.	0.54
PEFF	5.02	1.72	3.77	1.37	4.57	1.52	3.88	1.09	MEAN 2.87	S.D.	1.82
DAF	3.16	2.08	2.37	1.60	2.88	1.70	2.45	1.19	MEAN 2.18	S.D.	0.67

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
17	PLATE	F-104	1.5	28,000	DATA

PMAX 1.15
PEFF 1.71
DAF 1.49

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
17	PLATE	F-104	1.5	28,000	FAR

PMAX	1.44	0.79	1.46	0.79	1.45	0.76	1.45	0.74	MEAN 1.11	S.D.	0.50
PEFF	4.42	1.77	3.15	1.42	2.20	0.84	3.76	0.99	MEAN 2.32	S.D.	1.50
DAF	3.06	2.23	2.16	1.81	1.51	1.10	2.59	1.34	MEAN 1.98	S.D.	0.66

[redacted]

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
18	PLATE	XB-70	1.22	27,000	DATA

PMAX	2.75
PEFF	1.98
DAF	0.72

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
18	PLATE	XB-70	1.22	27,000	FAR

PMAX	2.42	1.81	2.41	1.76	2.40	1.68	2.39	1.71	MEAN 2.07	S.D.	0.74
PEFF	3.35	3.02	3.04	2.76	2.28	2.17	2.00	2.11	MEAN 2.59	S.D.	0.96
DAF	1.39	1.67	1.26	1.57	0.95	1.29	0.84	1.23	MEAN 1.27	S.D.	0.28

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
18	PLATE	B-58	1.22	27,000	DATA

PMAX	1.84
PEFF	2.26
DAF	1.23

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
18	PLATE	B-58	1.22	27,000	FAR

PMAX	1.87	1.22	1.86	1.22	1.86	1.20	1.84	1.26	MEAN 1.54	S.D.	0.59
PEFF	2.67	2.07	2.61	1.96	2.08	1.60	1.91	1.64	MEAN 2.09	S.D.	0.75
DAF	1.42	1.69	1.40	1.61	1.12	1.34	1.04	1.46	MEAN 1.38	S.D.	0.22

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
18	PLATE	XB-70	1.40	38,700	DATA

PMAX	1.59
PEFF	1.33
DAF	0.83

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
18	PLATE	XB-70	1.40	38,700	FAR

PMAX	1.75	1.04	1.74	1.02	1.74	1.07	1.73	1.16	MEAN 1.41	S.D.	0.57
PEFF	1.27	1.12	1.28	1.46	1.50	1.76	1.74	1.96	MEAN 1.51	S.D.	0.55
DAF	0.73	1.08	0.73	1.43	0.86	1.64	1.01	1.69	MEAN 1.15	S.D.	0.39

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
18	PLATE	XB-70	1.86	48,000	DATA

PMAX	1.34
PEFF	1.64
DAF	1.22

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
18	PLATE	XB-70	1.86	48,000	FAR

PMAX	1.39	0.78	1.38	0.83	1.38	0.89	1.38	0.93	MEAN 1.12	S.D.	0.45
PEFF	1.38	1.21	1.27	1.09	1.34	1.30	1.70	1.67	MEAN 1.37	S.D.	0.48
DAF	1.00	1.56	0.92	1.33	0.97	1.46	1.23	1.79	MEAN 1.28	S.D.	0.31

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
18	PLATE	F-104	1.5	28,000	DATA

PMAX	0.99
PEFF	0.55
DAF	0.56

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
18	PLATE	F-104	1.5	28,000	FAR

PMAX	1.34	0.79	1.37	0.78	1.36	0.73	1.35	0.70	MEAN 1.05	S.D.	0.46
PEFF	0.92	0.92	0.85	0.84	0.83	0.86	0.82	0.86	MEAN 0.86	S.D.	0.27
DAF	0.68	1.17	0.62	1.08	0.61	1.18	0.61	1.22	MEAN 0.90	S.D.	0.29

[redacted]

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
19	PLATE	[illegible]	[illegible]	[illegible]	DATA

PMAX 2.32
PEFF 2.10
DAF 0.91

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
19	PLATE	XB-70	1.22	27,000	FAR

PMAX	2.23	1.71	2.22	1.63	2.20	1.59	2.20	1.55	MEAN 1.92	S.D.	0.68
PEFF	2.06	2.02	2.13	2.02	2.20	2.03	2.16	2.00	MEAN 2.08	S.D.	0.66
DAF	0.93	1.18	0.96	1.24	1.00	1.27	0.98	1.29	MEAN 1.11	S.D.	0.15

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
19	PLATE	B-58	1.22	27,000	DATA

PMAX 1.67
PEFF 1.97
DAF 1.18

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
19	PLATE	B-58	1.22	27,000	FAR

PMAX	1.72	1.13	1.71	1.12	1.69	1.14	1.69	1.23	MEAN 1.43	S.D.	0.54
PEFF	1.26	1.31	1.46	1.50	1.67	1.71	1.89	1.91	MEAN 1.59	S.D.	0.56
DAF	0.73	1.15	0.86	1.34	0.99	1.50	1.12	1.56	MEAN 1.16	S.D.	0.30

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
19	PLATE	XB-70	1.40	38,700	DATA

PMAX 1.47
PEFF 1.01
DAF 0.69

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
19	PLATE	XB-70	1.40	38,700	FAR

PMAX	1.61	1.00	1.61	0.96	1.60	1.01	1.60	1.13	MEAN 1.32	S.D.	0.52
PEFF	1.22	1.12	1.19	1.08	1.18	1.14	1.18	1.31	MEAN 1.18	S.D.	0.38
DAF	0.75	1.12	0.74	1.12	0.74	1.12	0.74	1.16	MEAN 0.94	S.D.	0.21

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
19	PLATE	XB-70	1.86	48,000	DATA

PMAX 1.24
PEFF 0.78
DAF 0.63

ELEMENT	TYPE	CONTRACTOR	MACH	ALTITUDE	FIELD
19	PLATE	XB-70	1.86	48,000	FAR

PMAX	1.29	0.73	1.28	0.81	1.28	0.87	1.28	0.94	MEAN 1.06	S.D.	0.41
PEFF	0.67	0.71	0.78	0.65	0.59	0.56	0.54	0.52	MEAN 0.63	S.D.	0.22
DAF	0.52	0.97	0.61	0.80	0.46	0.65	0.42	0.55	MEAN 0.62	S.D.	0.18

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13 ABSTRACT

This study investigates the difference between near-field and far-field sonic boom intensities. To do so it defines a new intensity standard, effective static load which depends on load waveform as well as magnitude. Many sonic boom loading waveforms are computed for 19 structural elements, of various types, produced by two SST designs as well as F-104, B-58 and XB-70 aircraft. It is concluded that near-field booms are less intense than far-field booms, the magnitude of the difference depending on the character of the waveform. The more the waveform is distorted from a symetrical far-field (N-wave) waveshape, the lower the near-field intensity. It is recommended that further theoretical study be made in order to quantify results and isolate the influence of specific parameters on boom intensity.

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KEY WORDS	LINK A	LINK B	LINK C
Sonic Boom Intensity Near-Field Far-Field Struc ural Response Supersonic Transport Structural Dynamics			

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